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FIG. 1

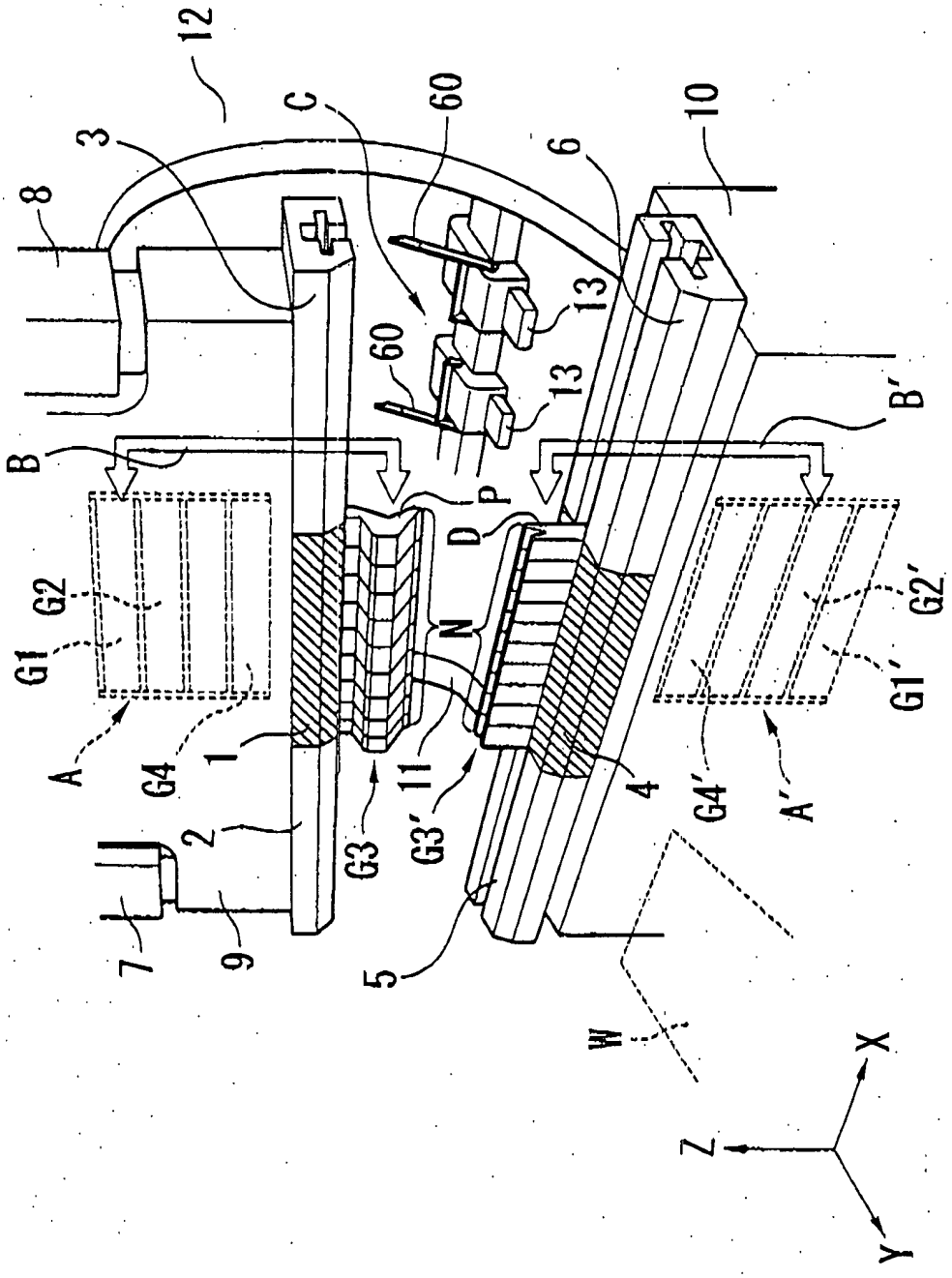


FIG. 2

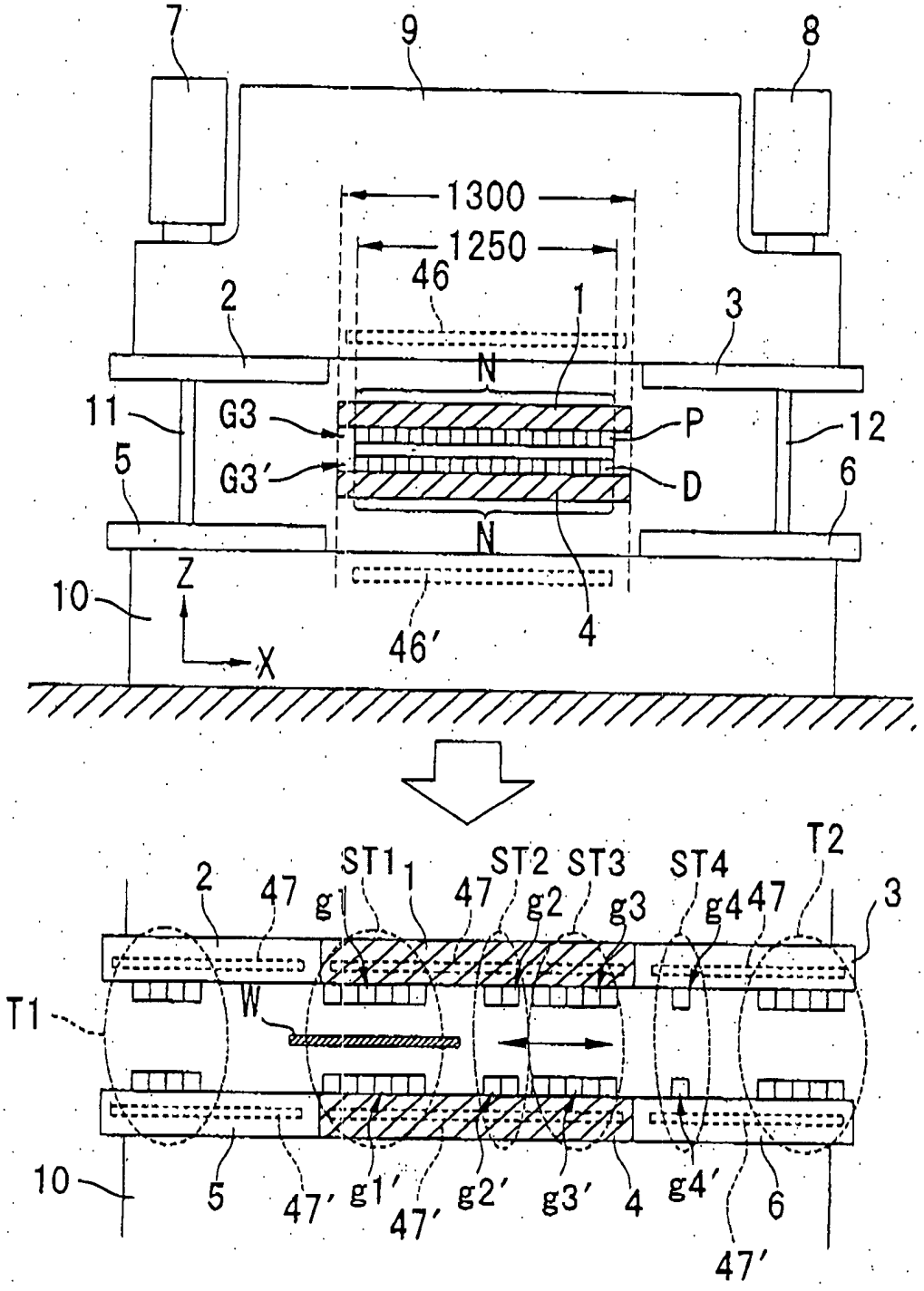

7
9
8
1300
1250
46
2
1
3
N
11
G3
P
12
5
G3'
D
6
N
10
Z
X
46'
4
T2
ST1
ST2
ST3
ST4
2
47
g1
1
47
g2
g3
g4
47
3
T1
W
10
5
47'
g1'
47'
g2'
g3'
4
g4'
6
47'

FIG. 3

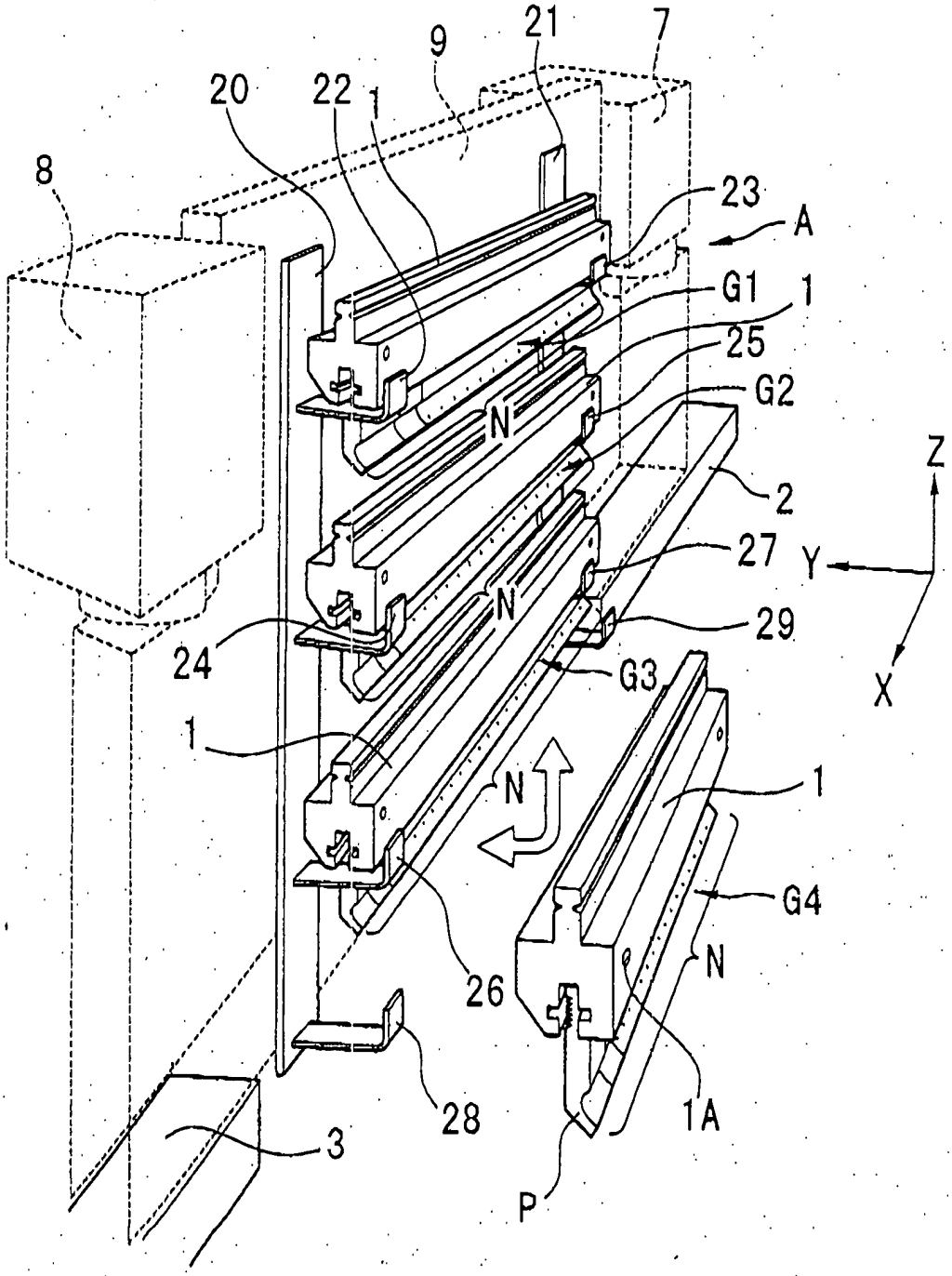


FIG. 4

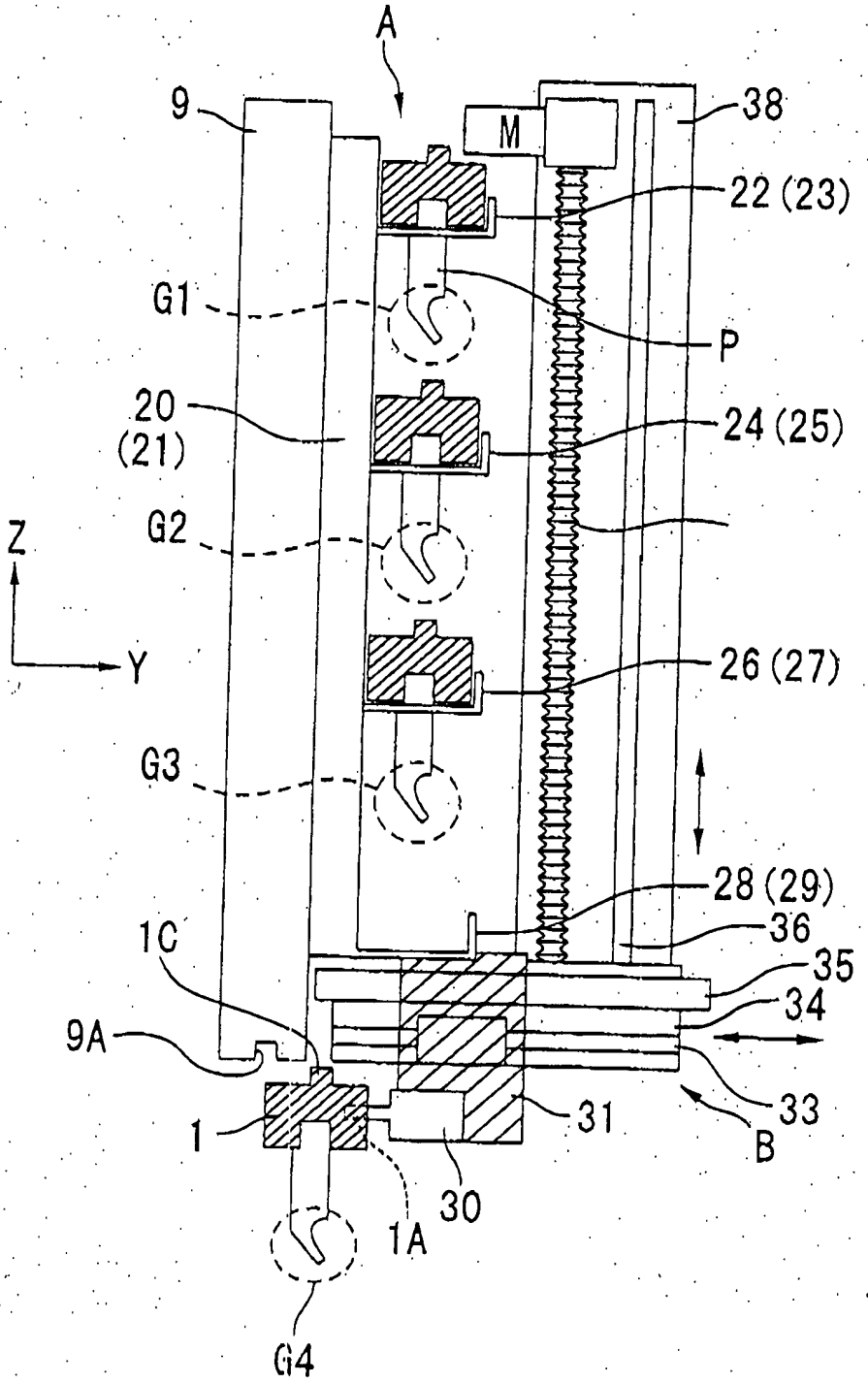

A
9
M
38
22 (23)
G1
P
20
(21)
24 (25)
G2
Z
Y
26 (27)
G3
28 (29)
1C
36
35
34
9A
33
31
B
1
30
1A
G4

FIG. 5

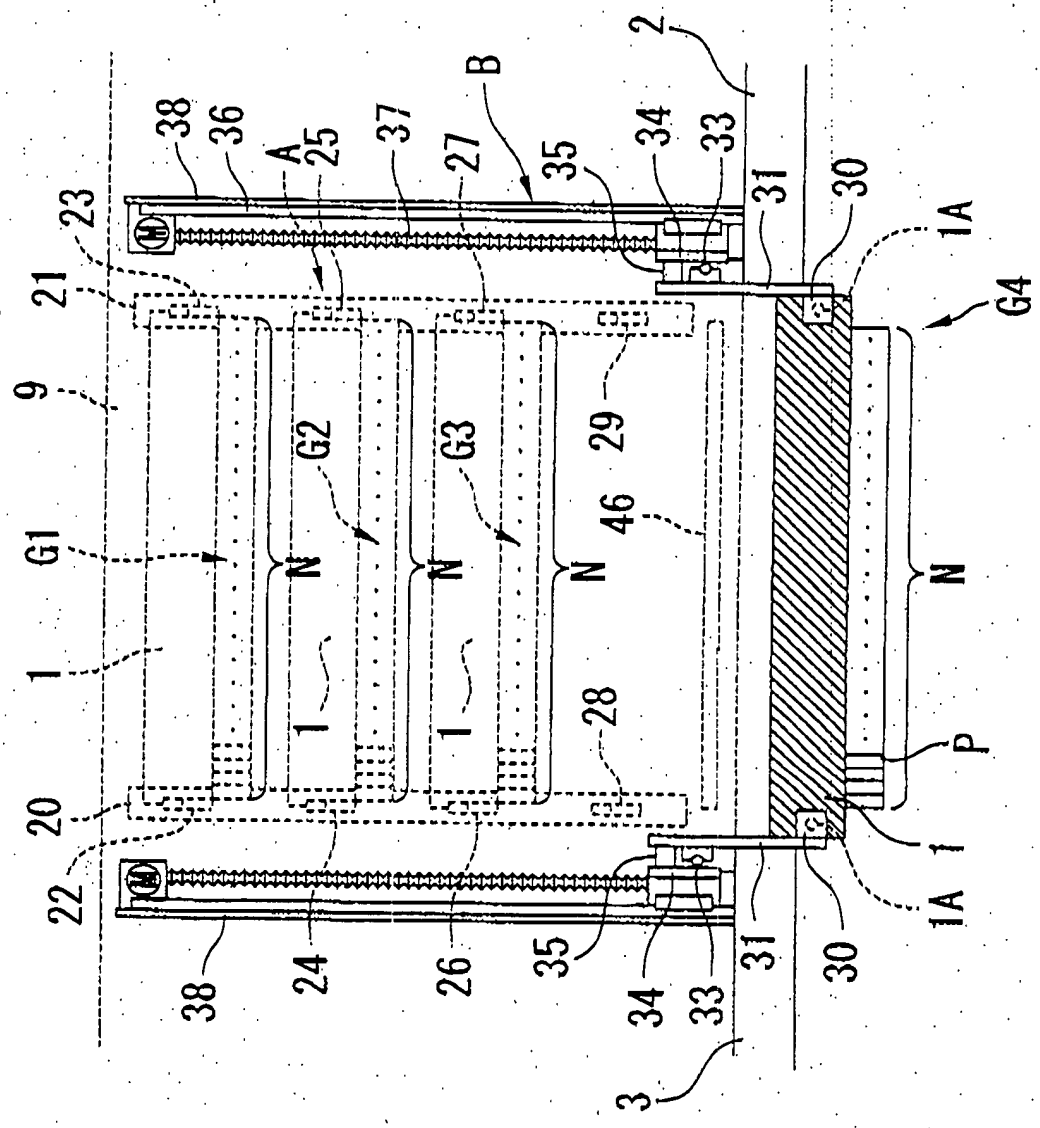

2
38
36
A
25
37
B
27
35
34
33
31
30
1A
23
21
G4
9
29
G2
G3
46
G1
N
1
28
P
20
22
24
26
35
34
33
31
30
38
3

FIG. 6

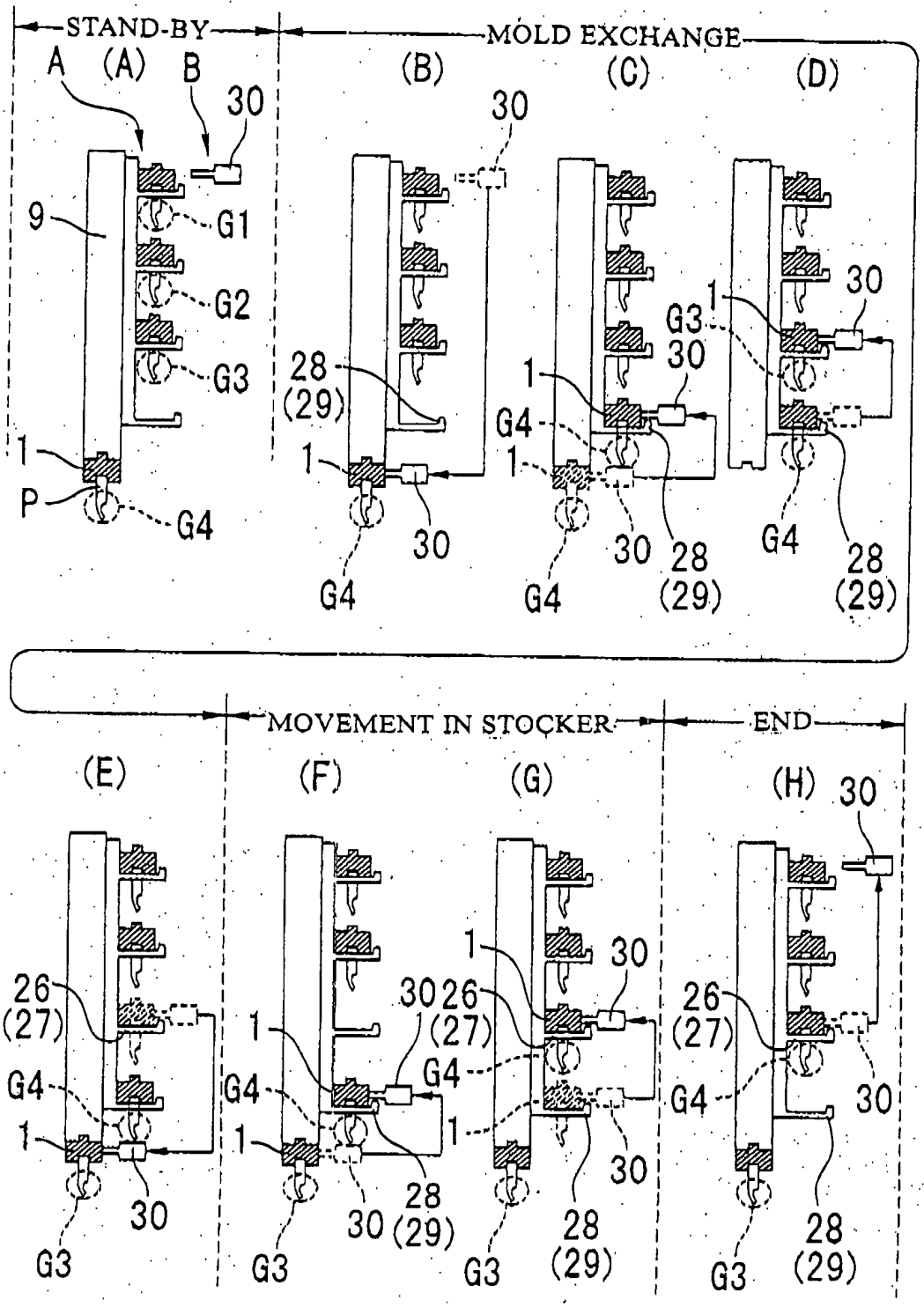

STAND-BY
MOLD EXCHANGE
A
(A)
B
(B)
(C)
(D)
30
9
G1
G2
G3
1
P
G4
28
(29)
MOVEMENT IN STOCKER
END
(E)
(F)
(G)
(H)
26
(27)

FIG. 7

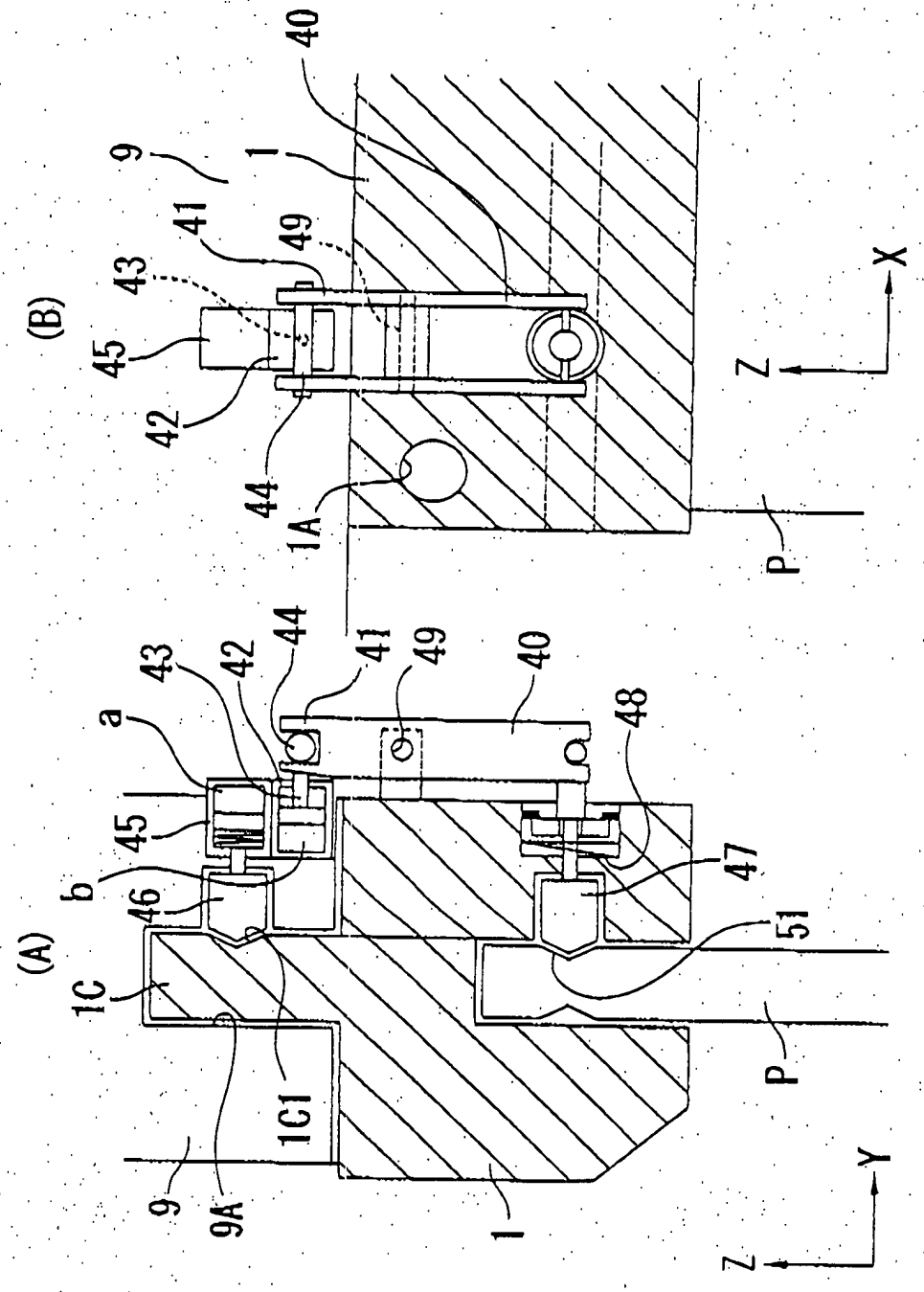

(B)
40
9
1
41
49
43
45
42
44
1A
P
Z
X
(A)
a
43
42
44
41
49
40
48
45
b
46
47
51
1C
1C1
9
9A
1
P
Z
Y

FIG. 8

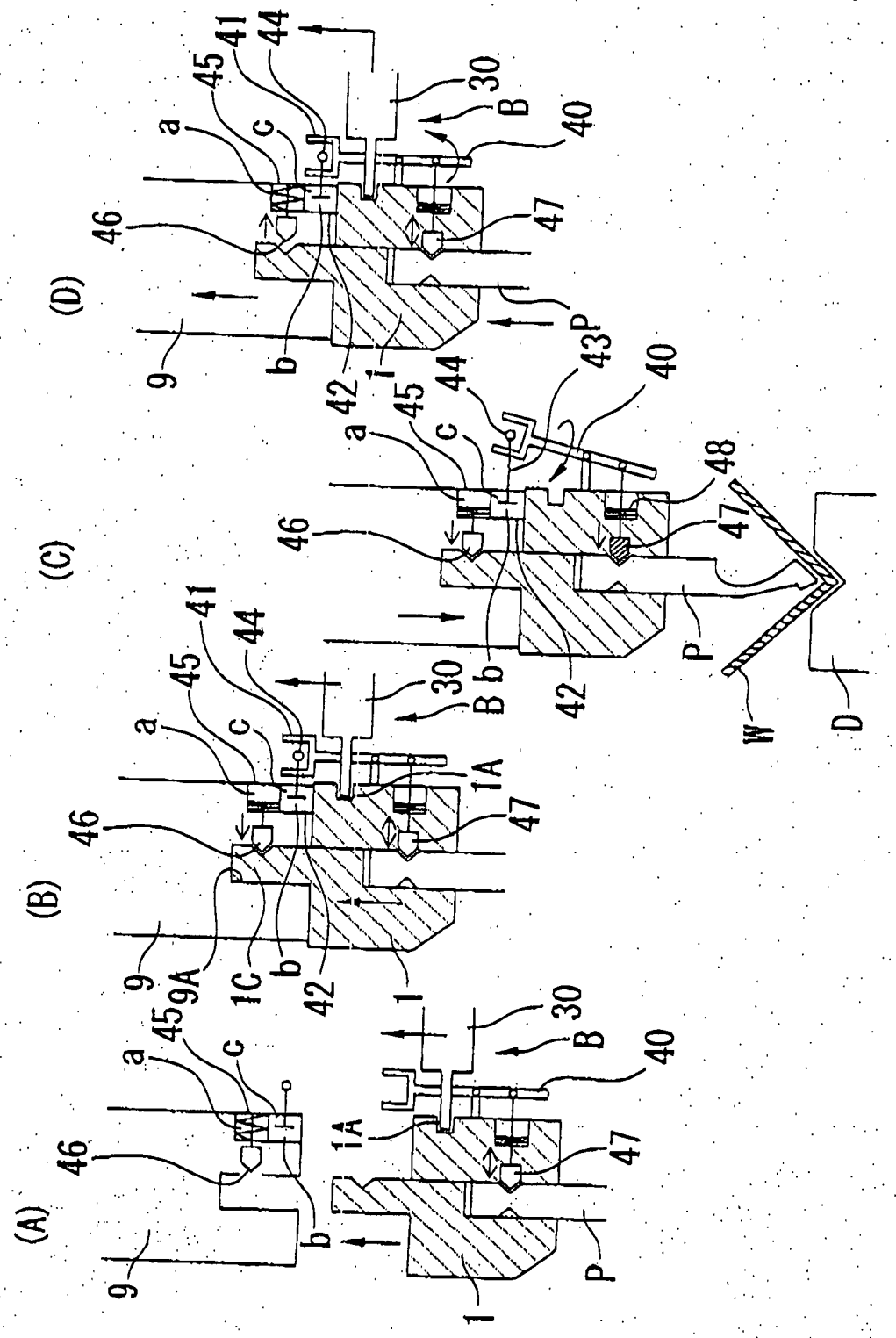


FIG. 9

		a	b	c	
①	JUST BEFORE ATTACHMENT	off	off	off	(FIG. 8(A))
②	TOOL GROUP MOVEMENT (SLIDE)	on	off	off	(FIG. 8(B))
③	BENDING (CLAMP)	on	on	off	(FIG. 8(C))
④	JUST BEFORE DETACHMENT	off	off	off	(FIG. 8(D))

FIG. 10

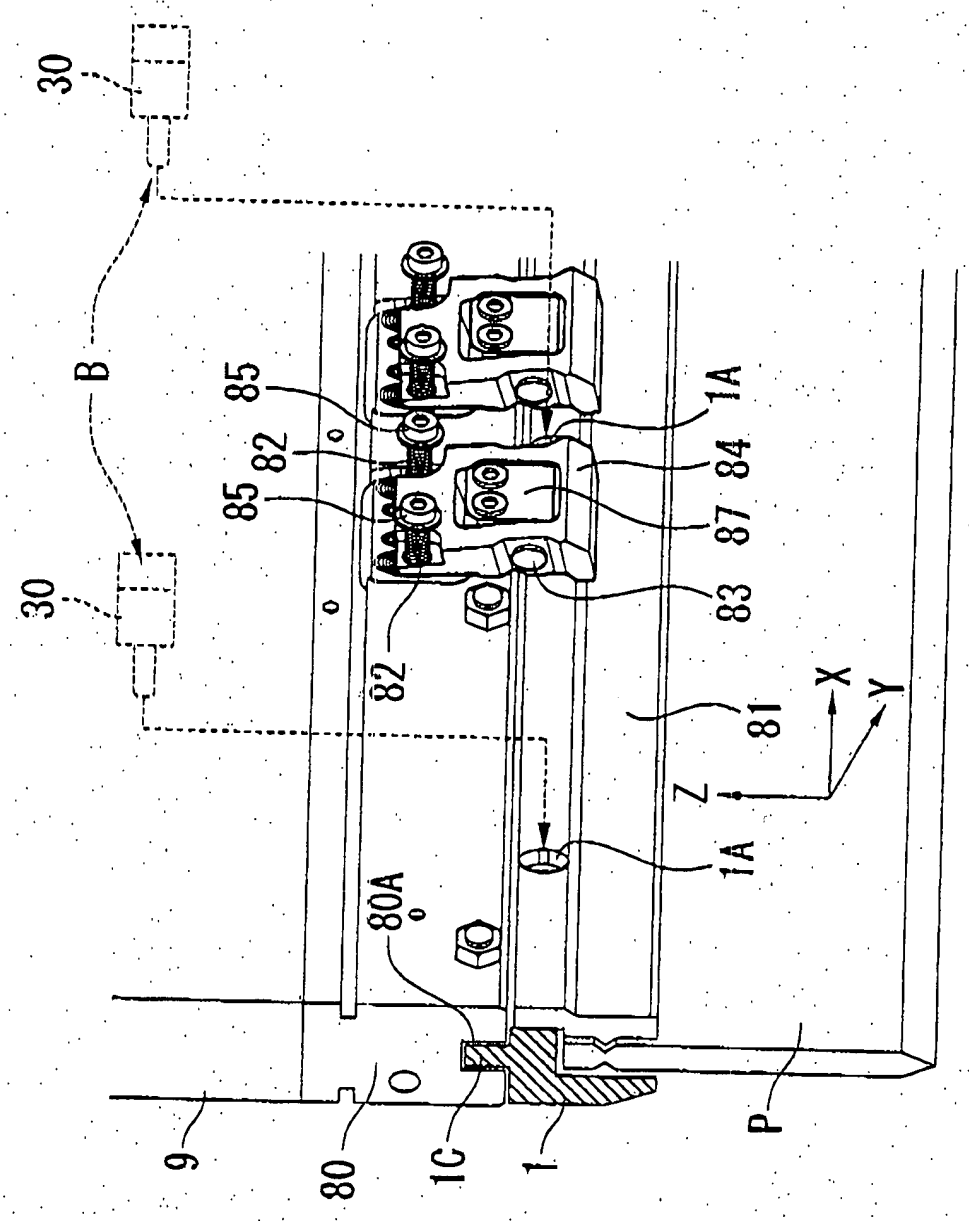


FIG. 11

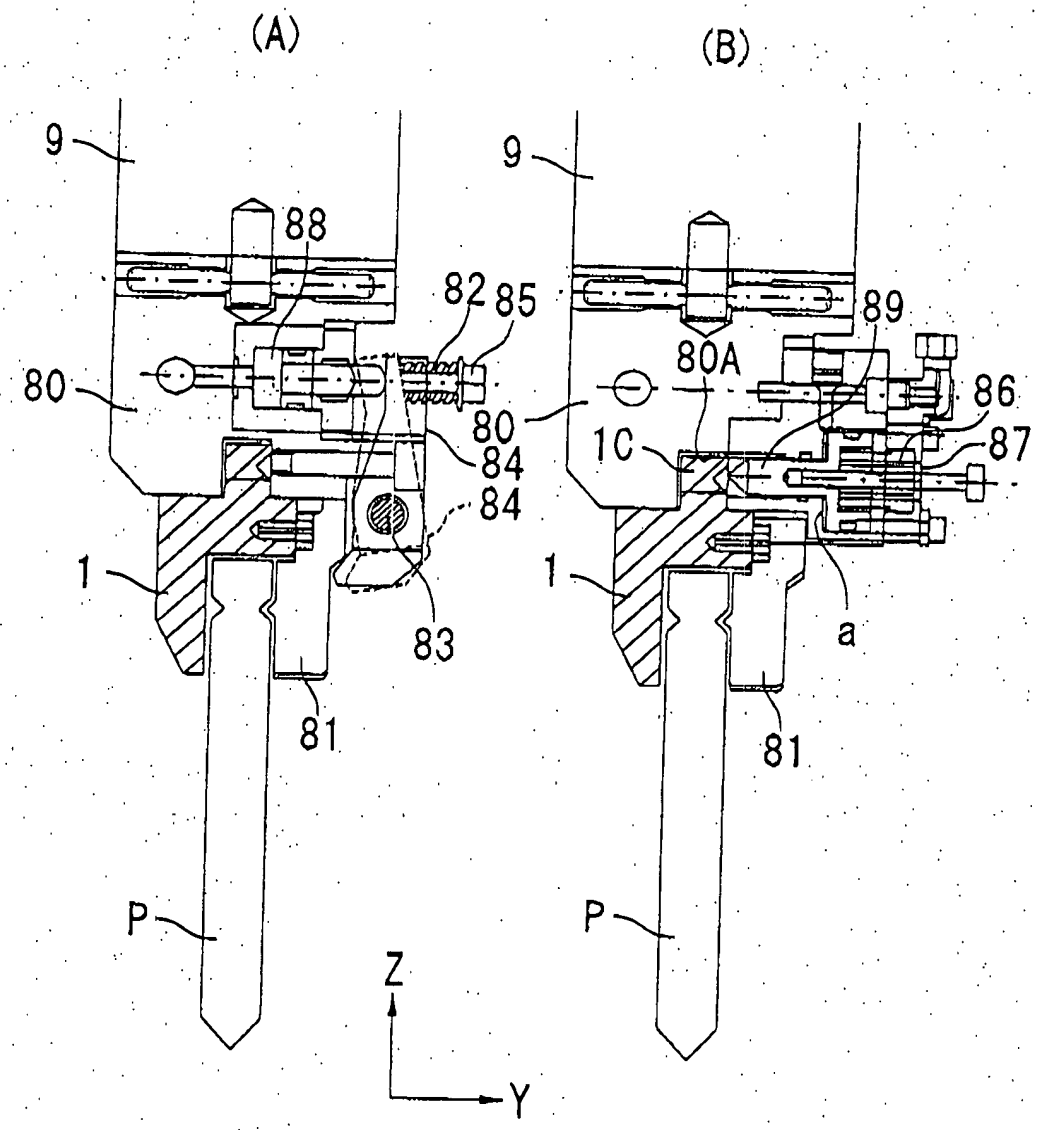


FIG. 12

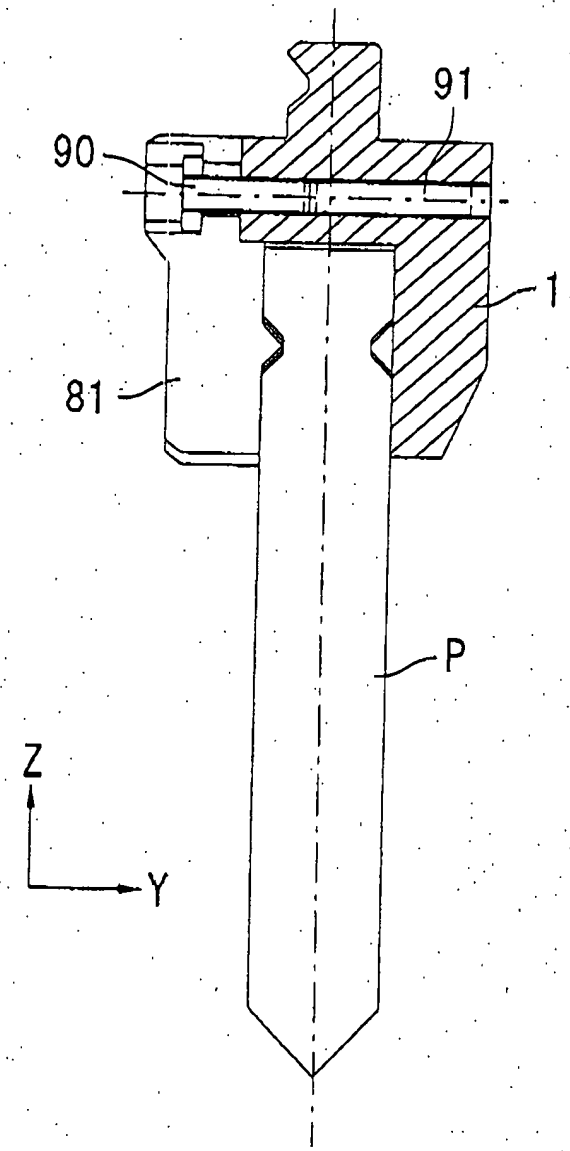


FIG. 13

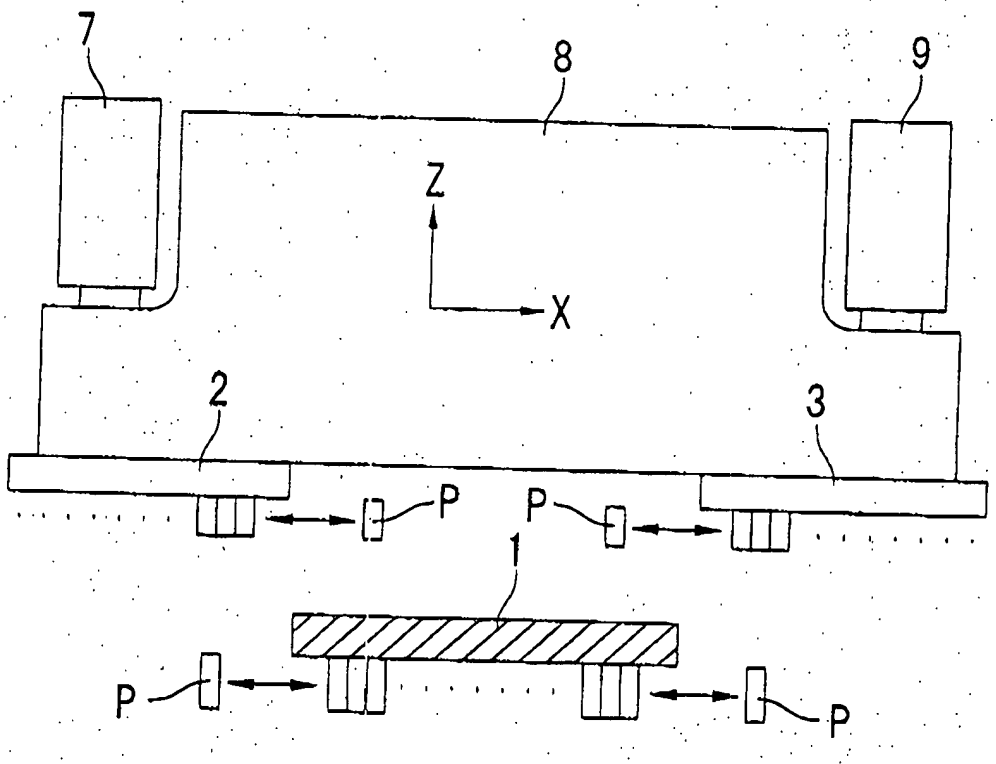


FIG. 14

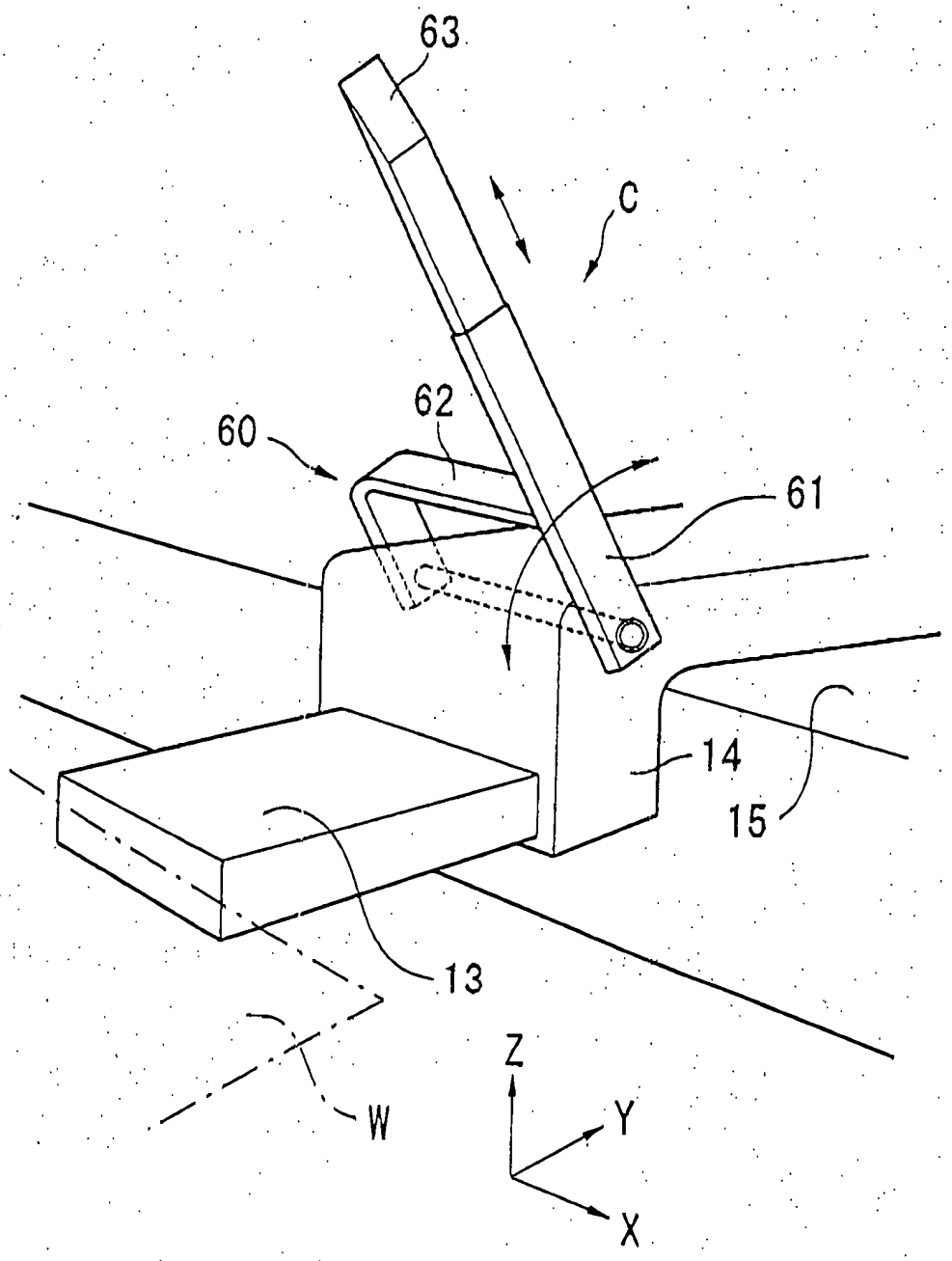


FIG. 15

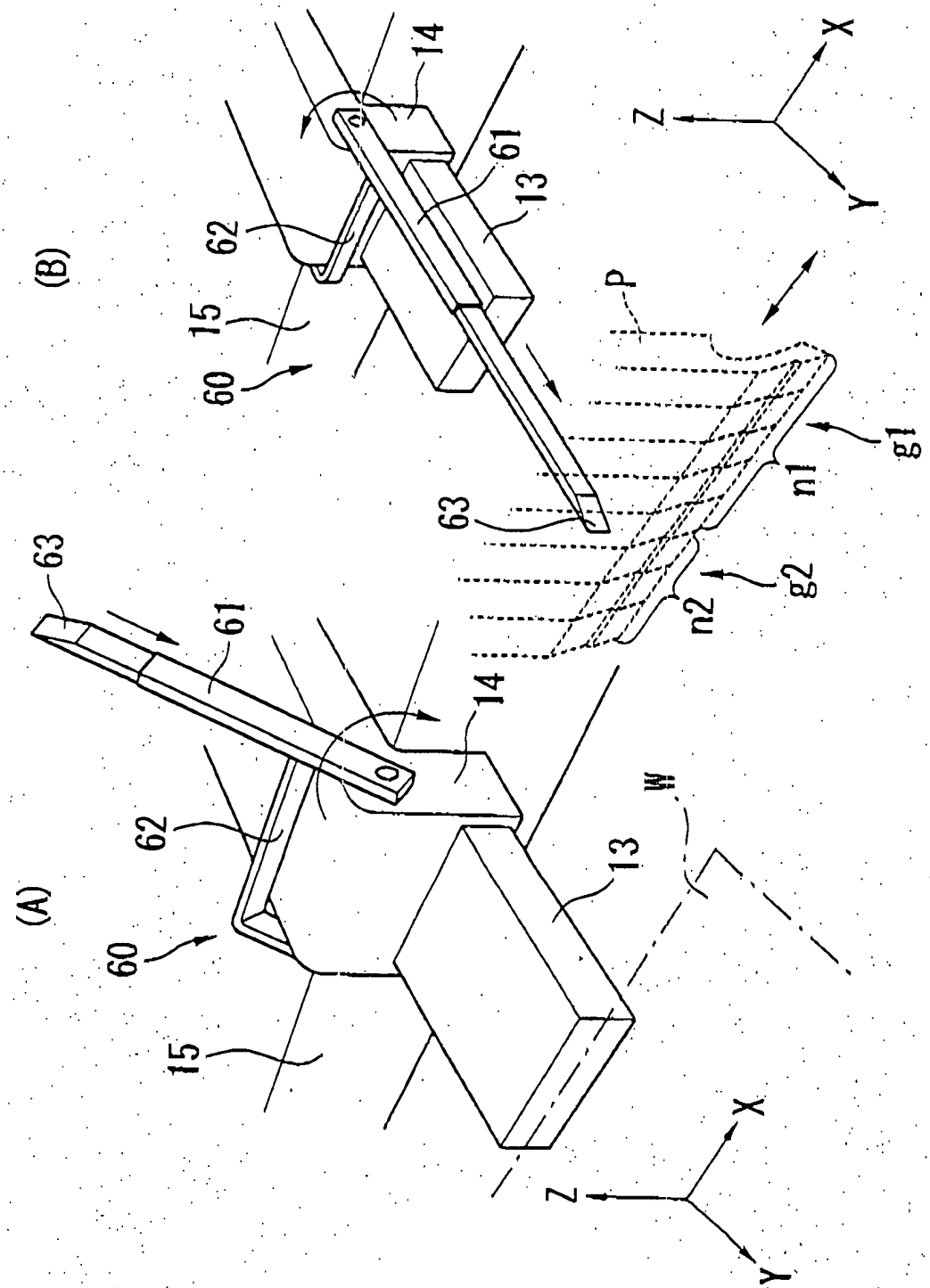


FIG. 16

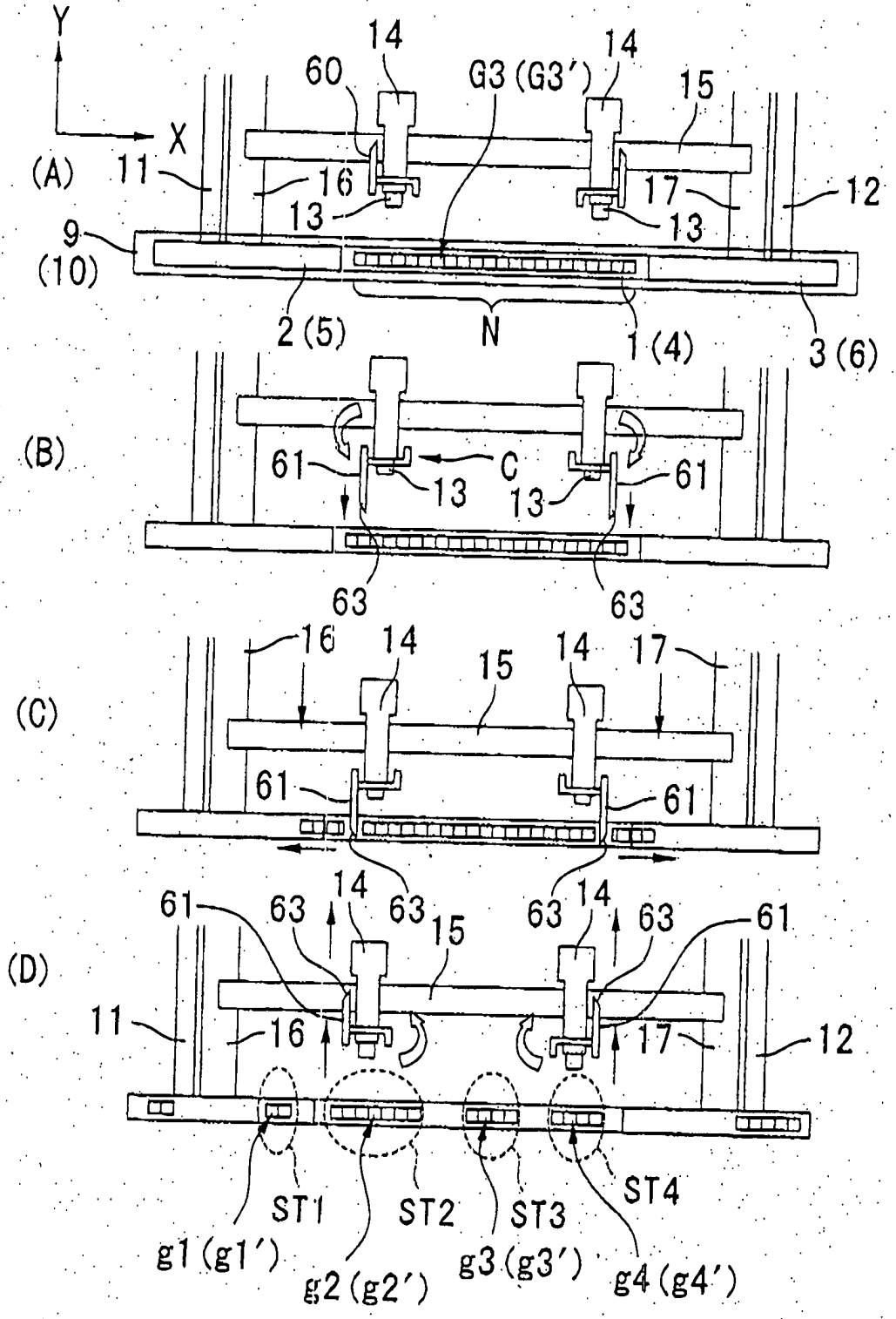

Y
X
(A)
11
60
14
G3 (G3')
14
15
16
13
17
13
12
9
(10)
2 (5)
N
1 (4)
3 (6)
(B)
61
C
13
13
61
63
63
(C)
16
14
15
14
17
61
61
(D)
61
63
14
63
15
63
14
63
61
11
16
17
12
ST1
ST2
ST3
ST4
g1 (g1')
g2 (g2')
g3 (g3')
g4 (g4')

FIG. 17

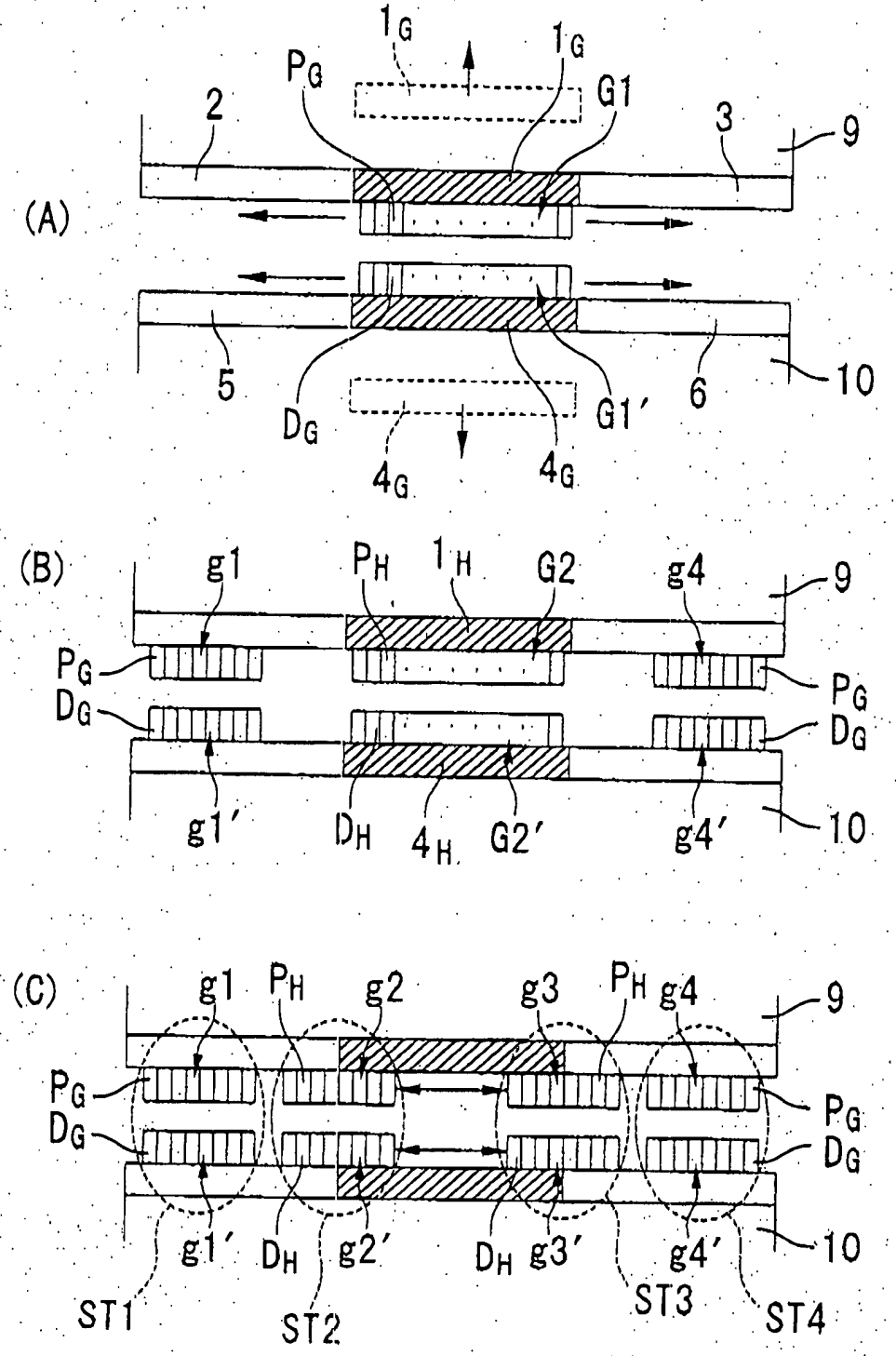

(A)
1G
1G
PG
G1
2
3
9
5
DG
G1′
6
10
4G
4G
(B)
g1
PH
1H
G2
g4
9
PG
DG
PG
DG
g1′
DH
4H
G2′
g4′
10
(C)
g1
PH
g2
g3
PH
g4
9
PG
DG
PG
DG
g1′
DH
g2′
DH
g3′
g4′
10
ST1
ST2
ST3
ST4

FIG. 18

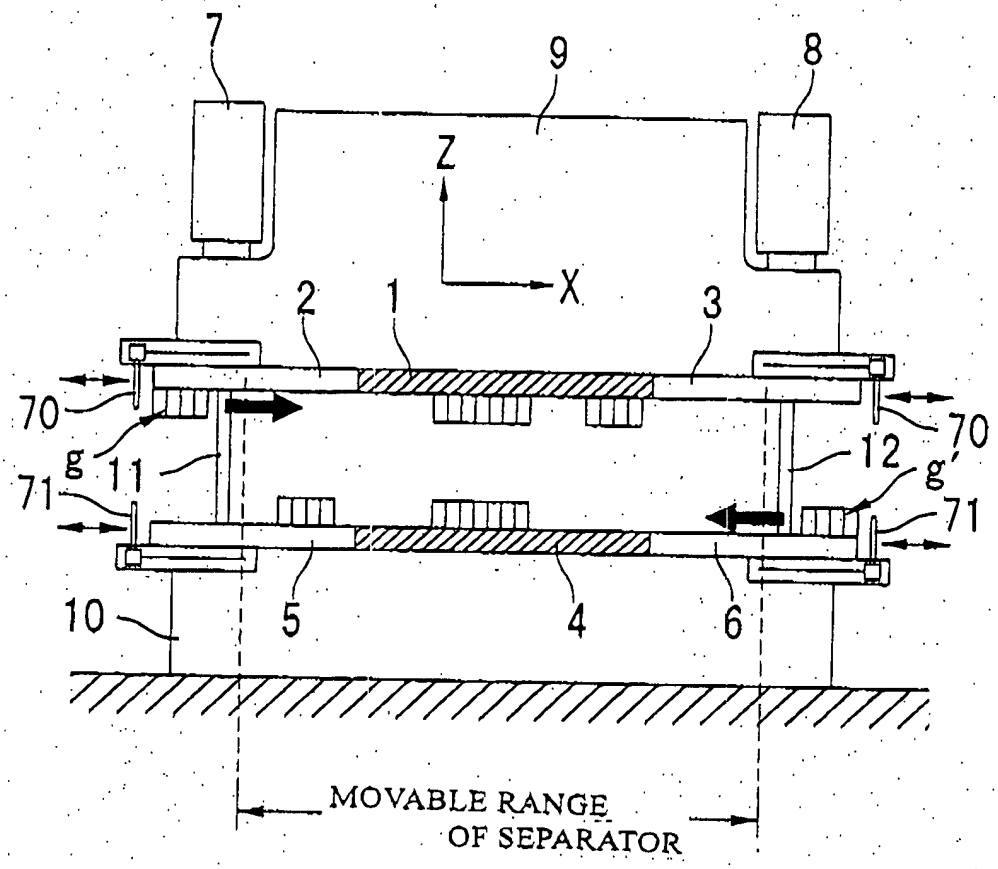
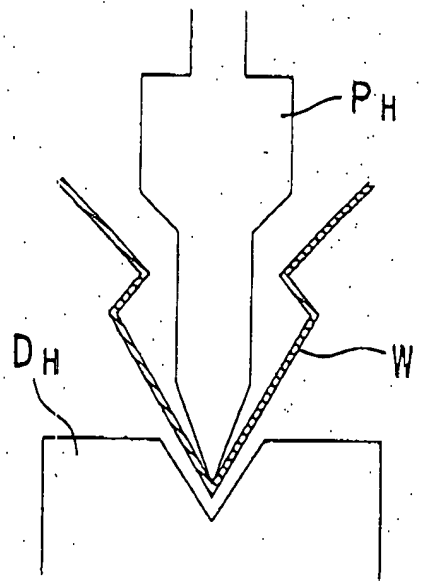

7
9
8
Z
X
2
1
3
70
70
g
11
12
g'
71
71
10
5
4
6
MOVABLE RANGE
OF SEPARATOR

FIG. 19

(A)



(B)

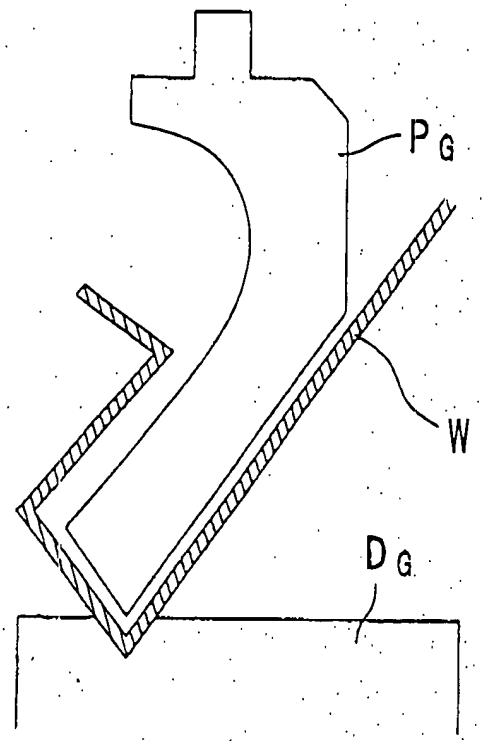


FIG. 20

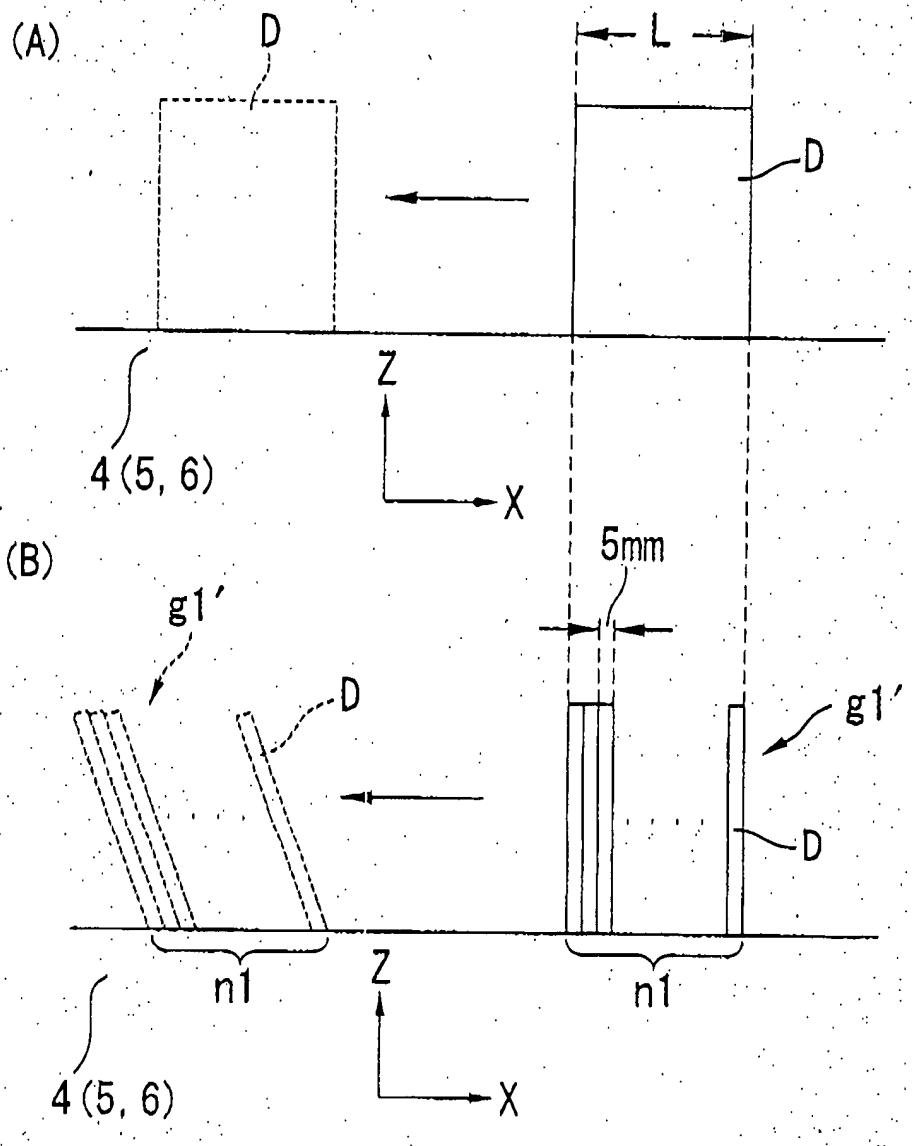


FIG. 21

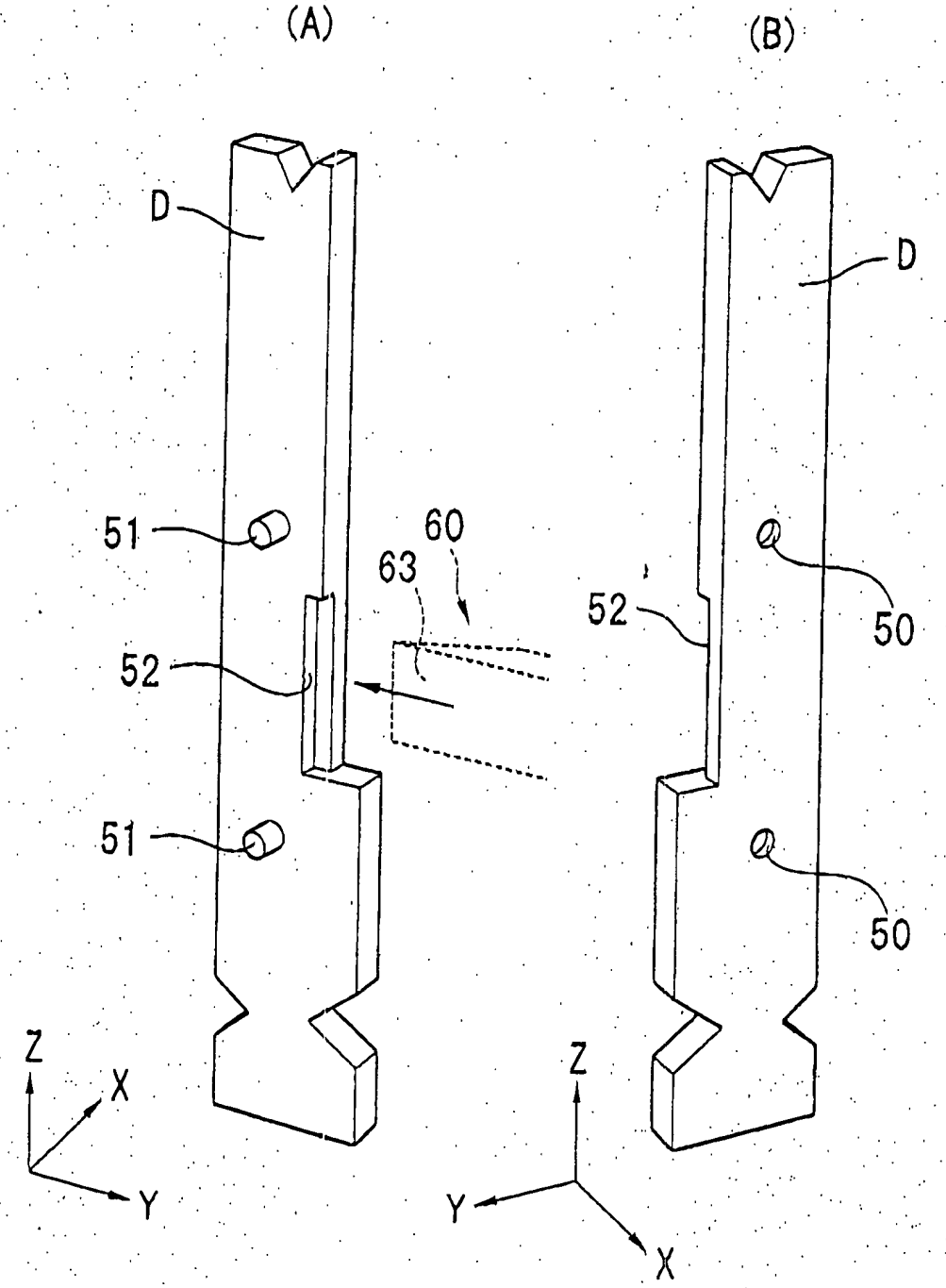


FIG. 22

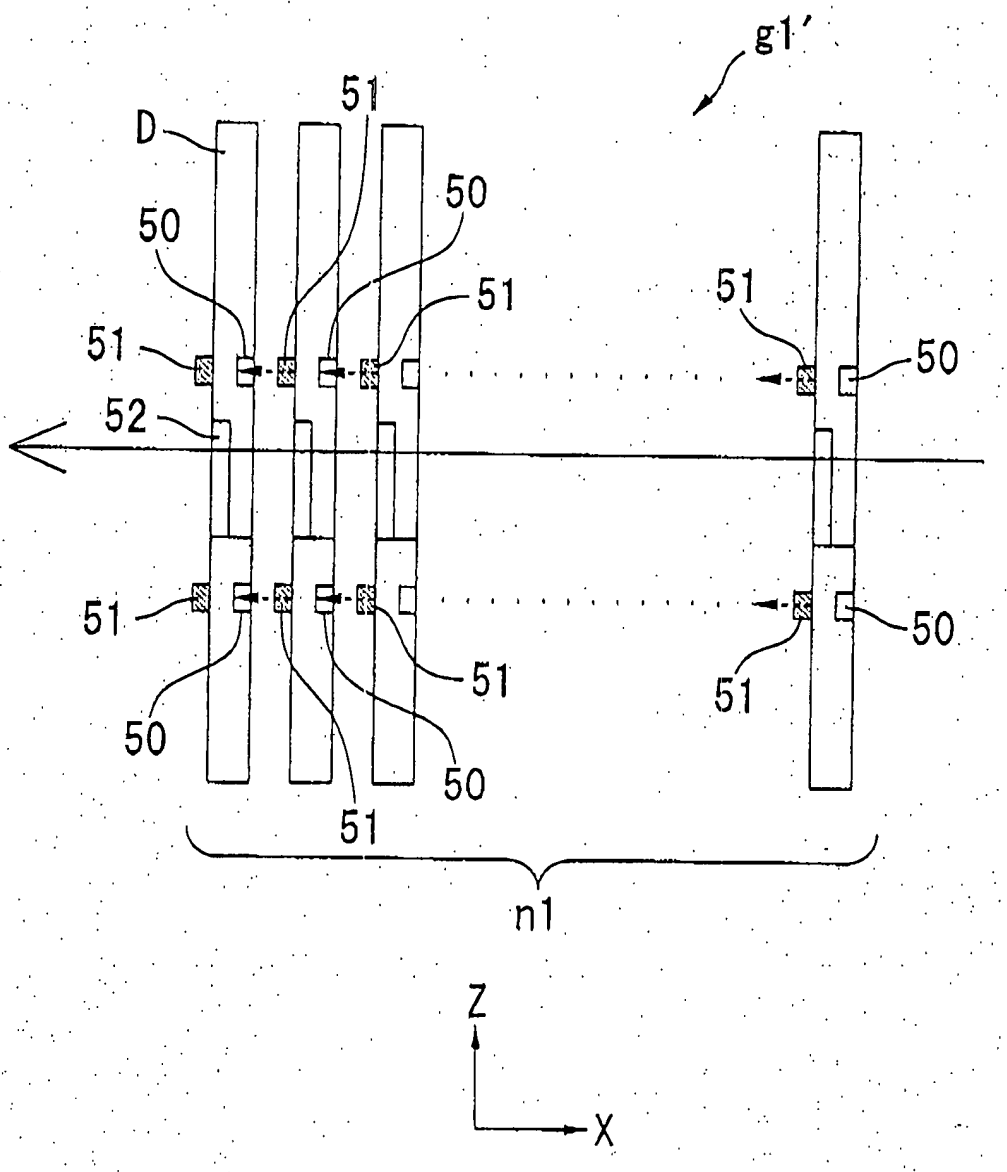


FIG. 23

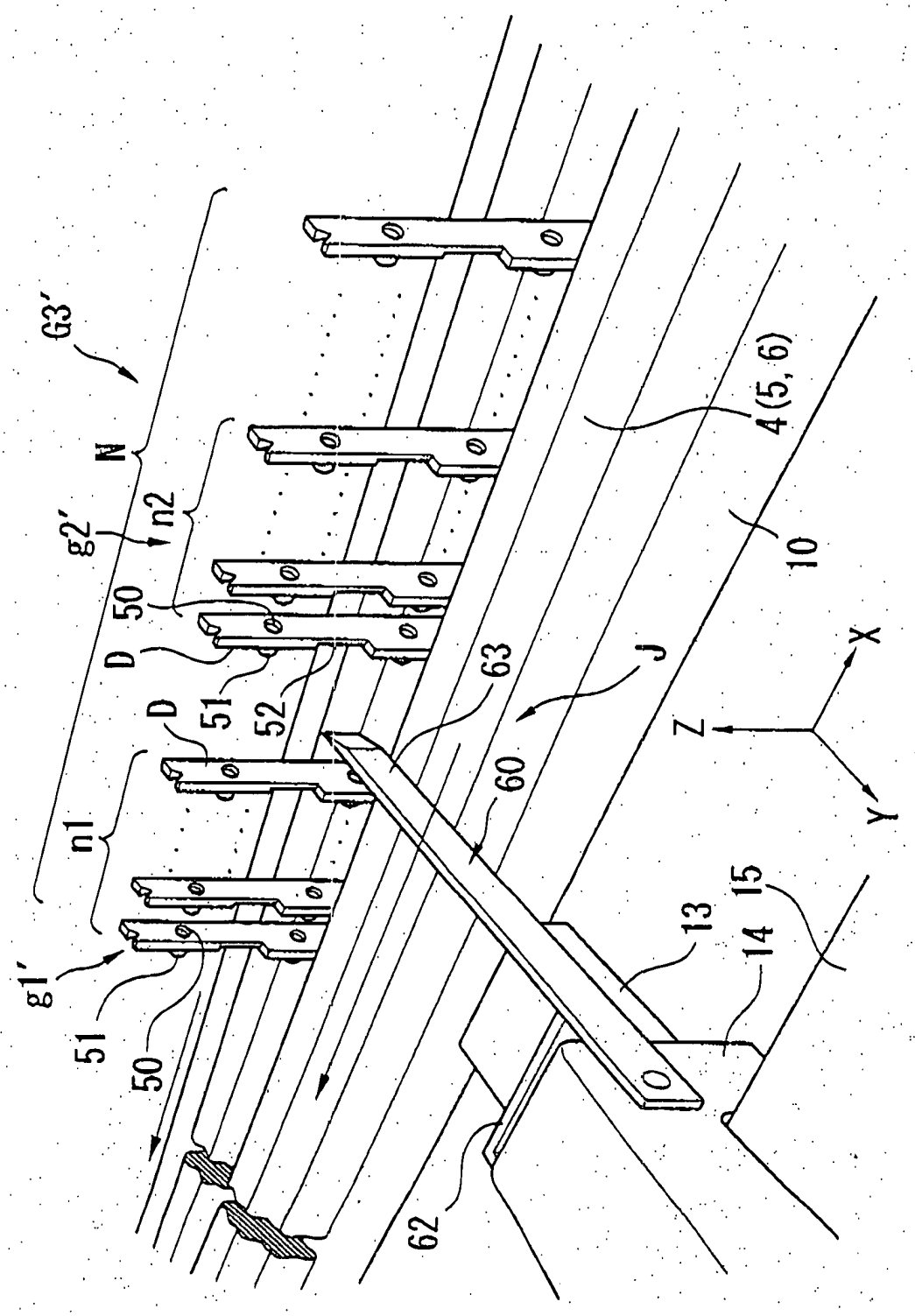


FIG. 24

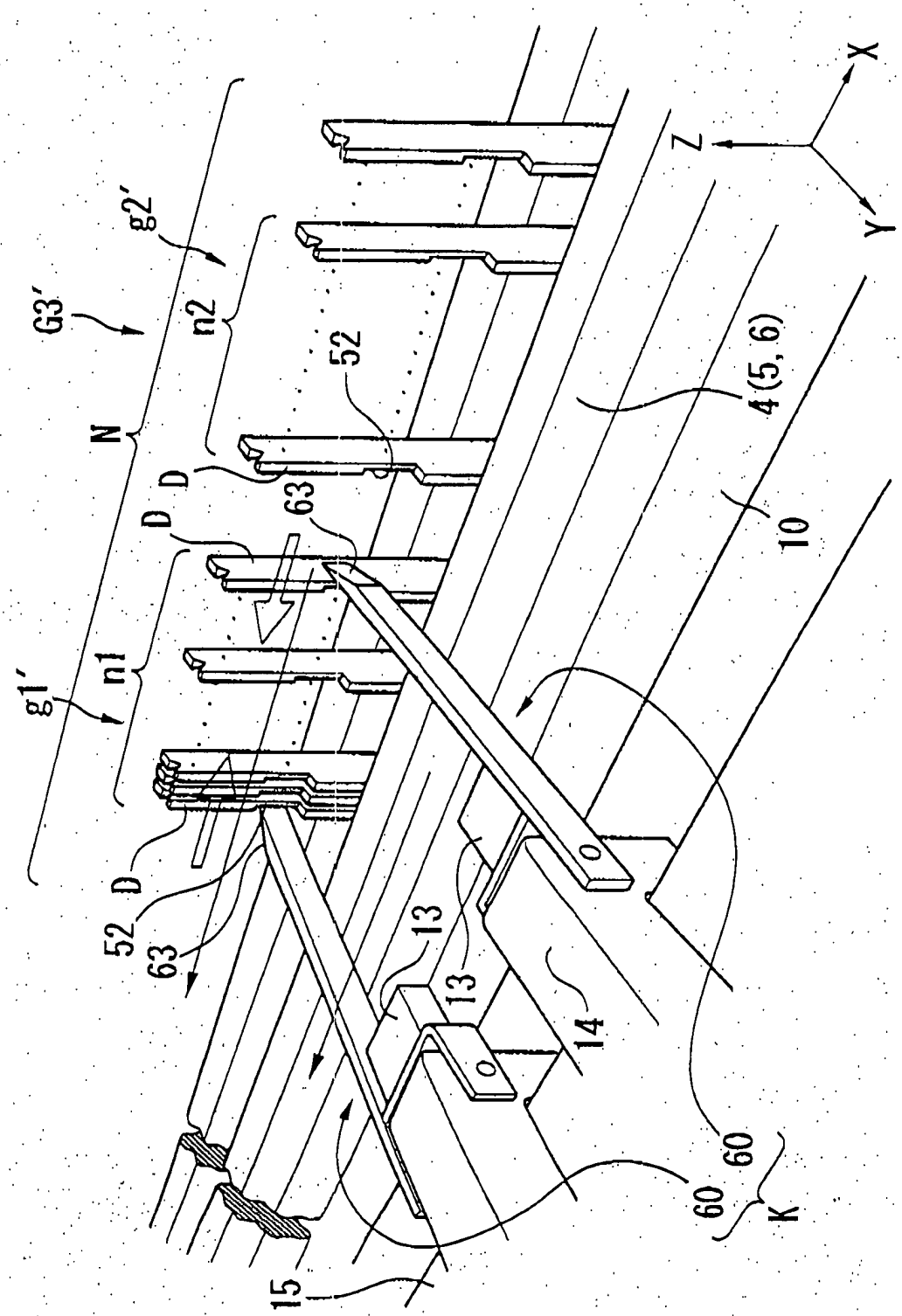


FIG. 25

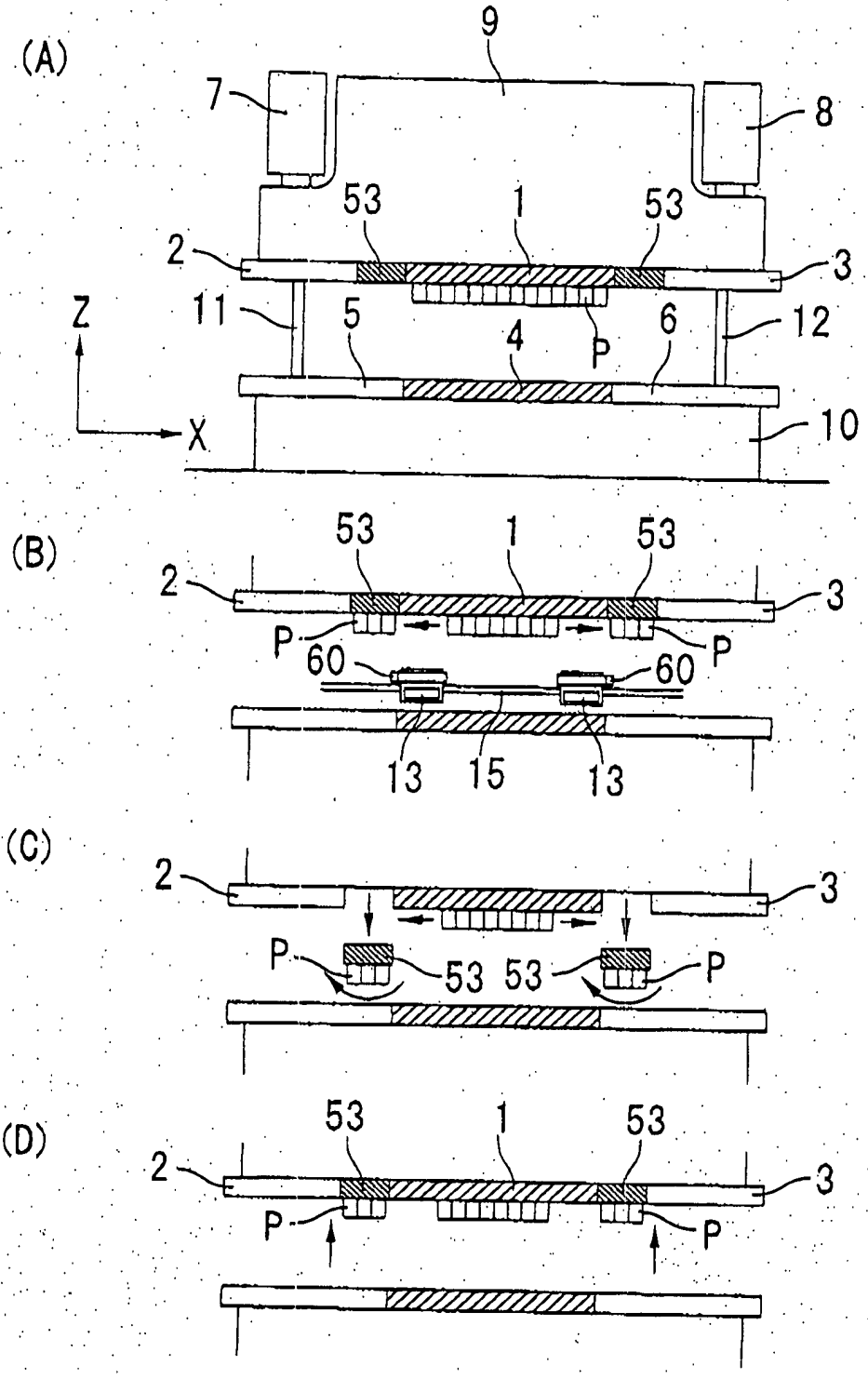

(A)
9
7
8
53
1
53
2
3
11
5
4
P
6
12
Z
X
10
(B)
53
1
53
2
3
P
P
60
60
13
15
13
(C)
2
3
P
53
53
P
(D)
53
1
53
2
3
P
P

FIG. 26

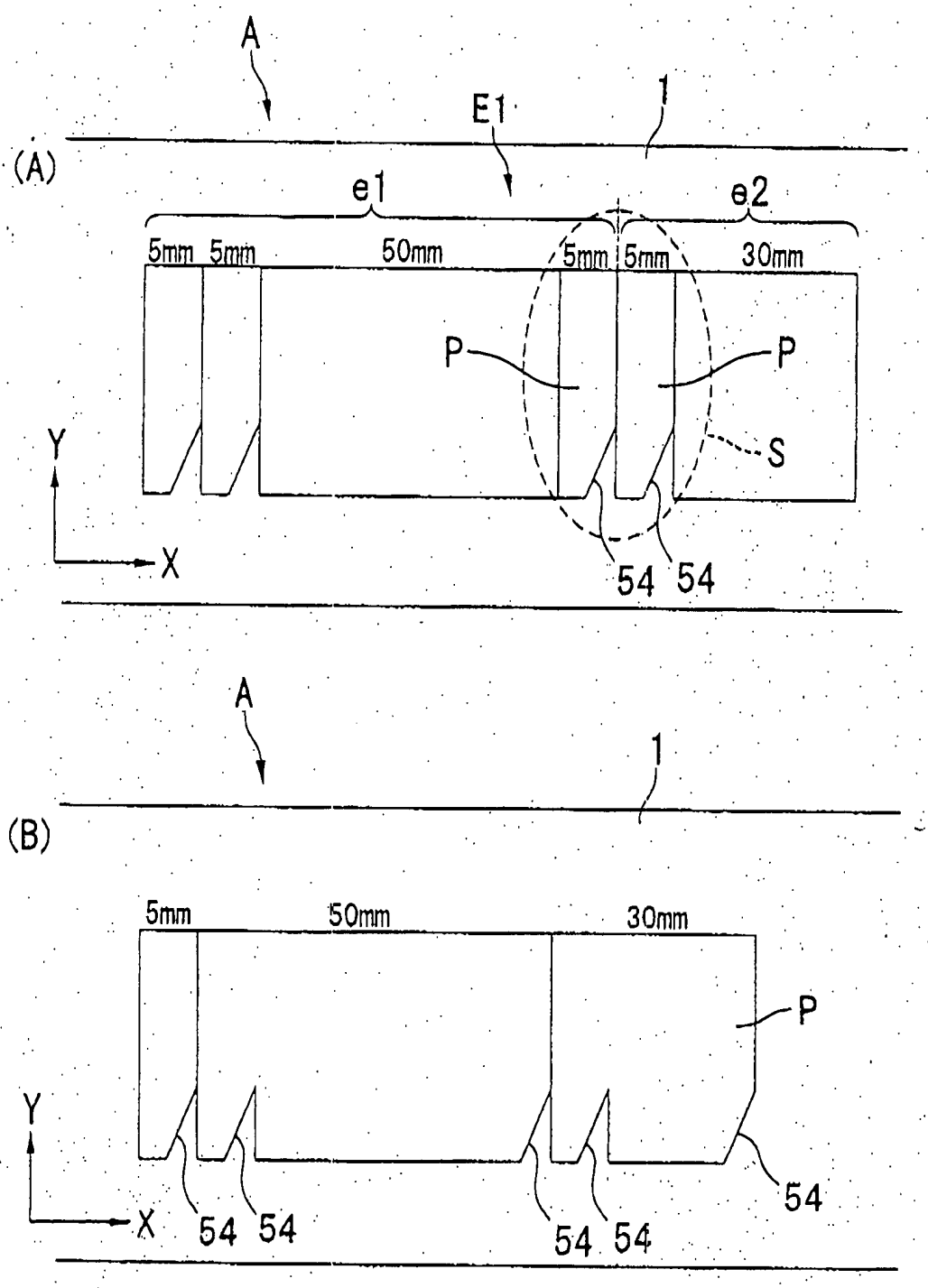

A
E1
1
(A)
e1
e2
5mm
5mm
50mm
5mm
5mm
30mm
P
P
S
Y
X
54
54
A
1
(B)
5mm
50mm
30mm
P
Y
X
54
54
54
54
54

FIG. 27

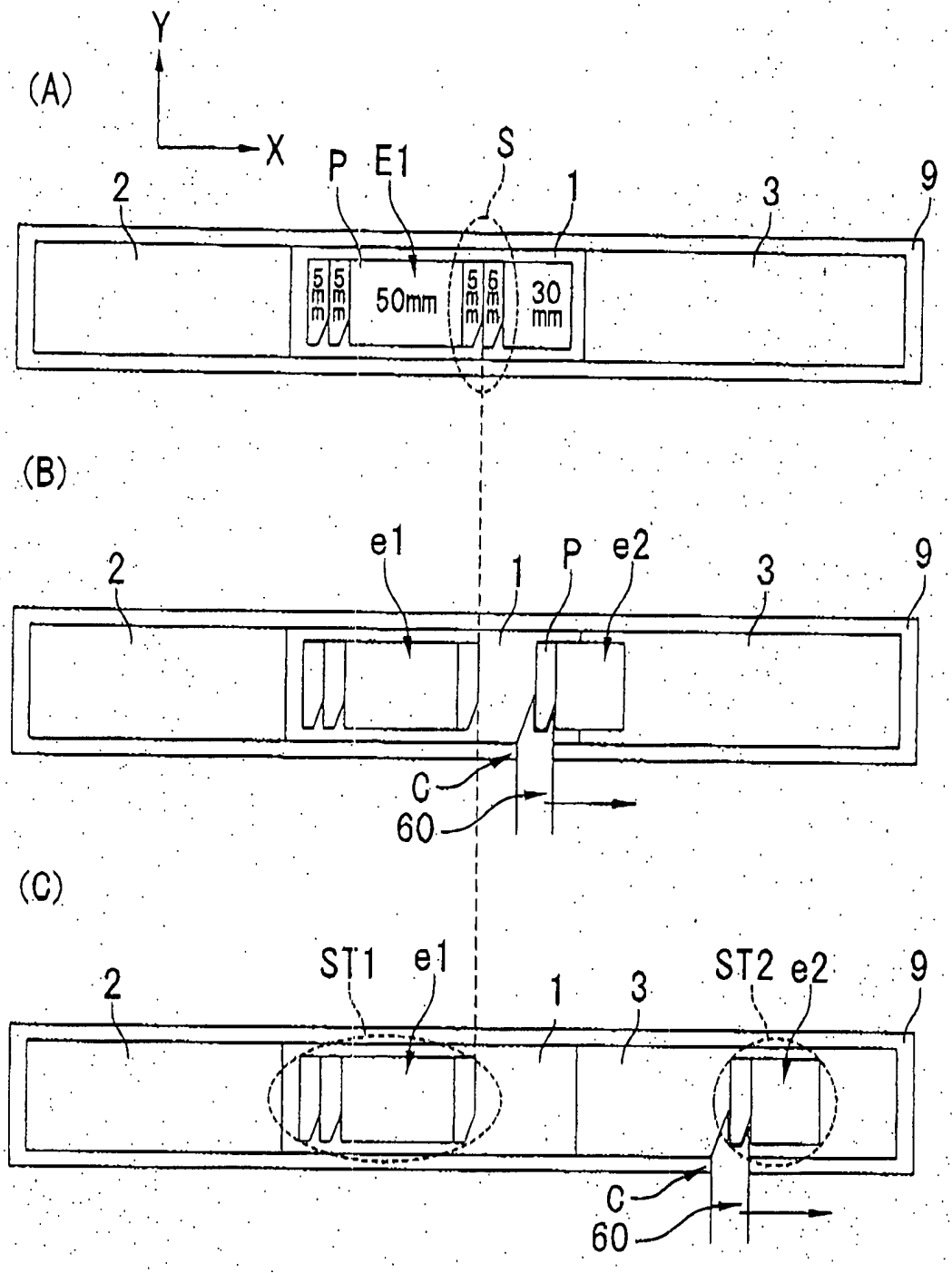

(A)
Y
X
P
E1
S
2
1
3
9
5mm
5mm
50mm
5mm
5mm
30 mm
(B)
e1
P
e2
2
1
3
9
C
60
(C)
ST1
e1
ST2
e2
2
1
3
9
C
60

FIG. 28

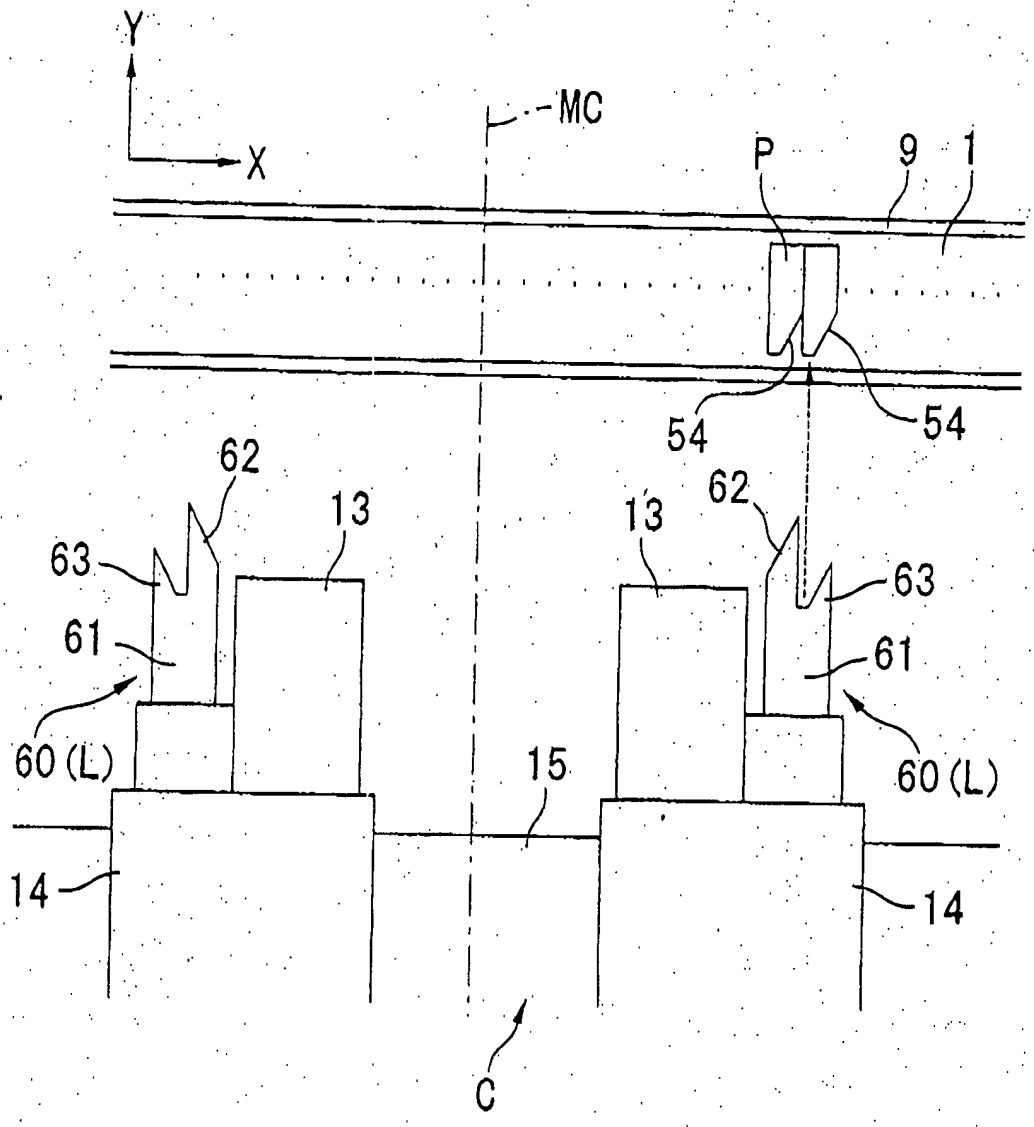


FIG. 29

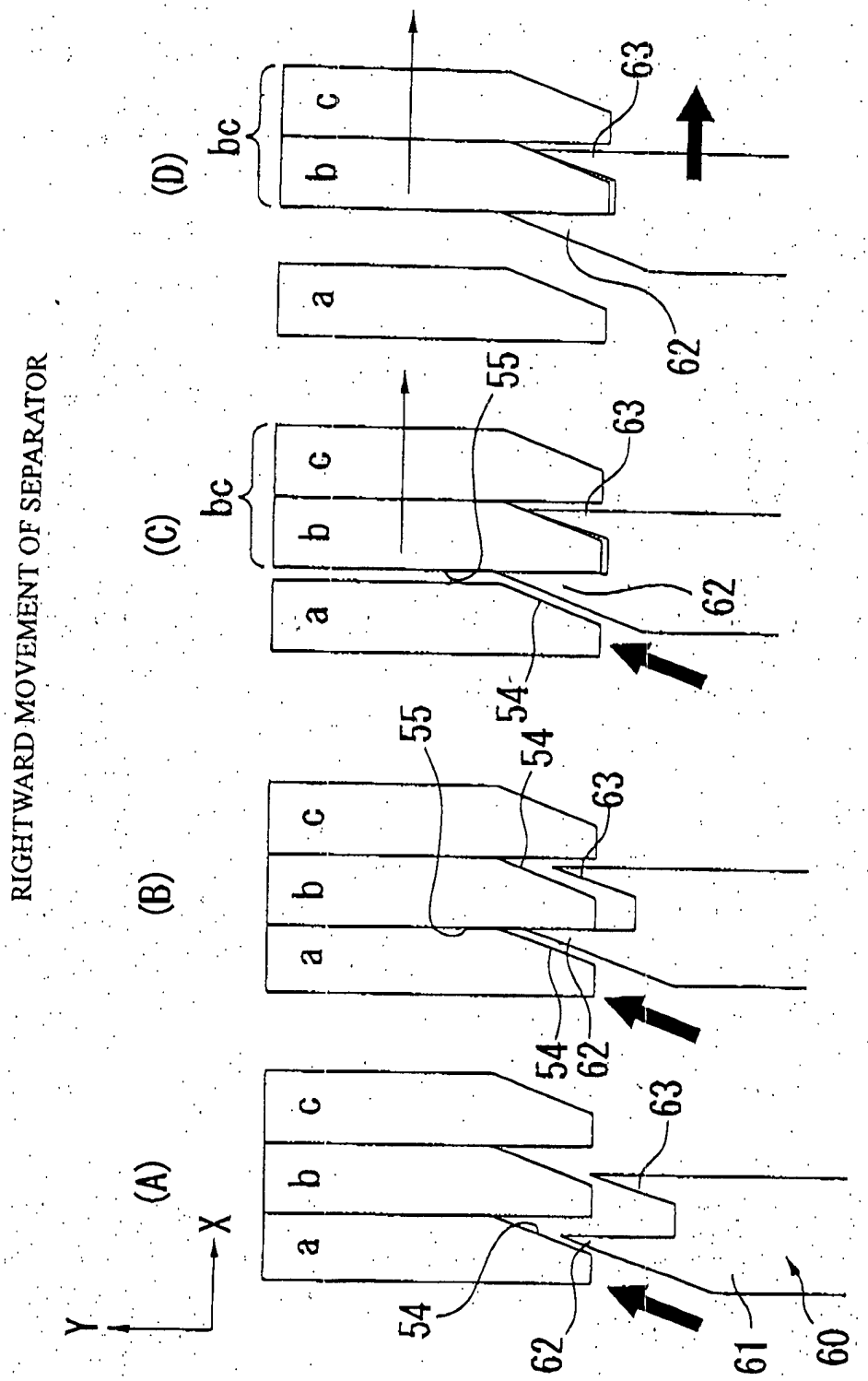

RIGHTWARD MOVEMENT OF SEPARATOR
(A)
(B)
(C)
(D)
a
b
c
bc
X
Y
54
55
62
63
60
61

FIG. 30

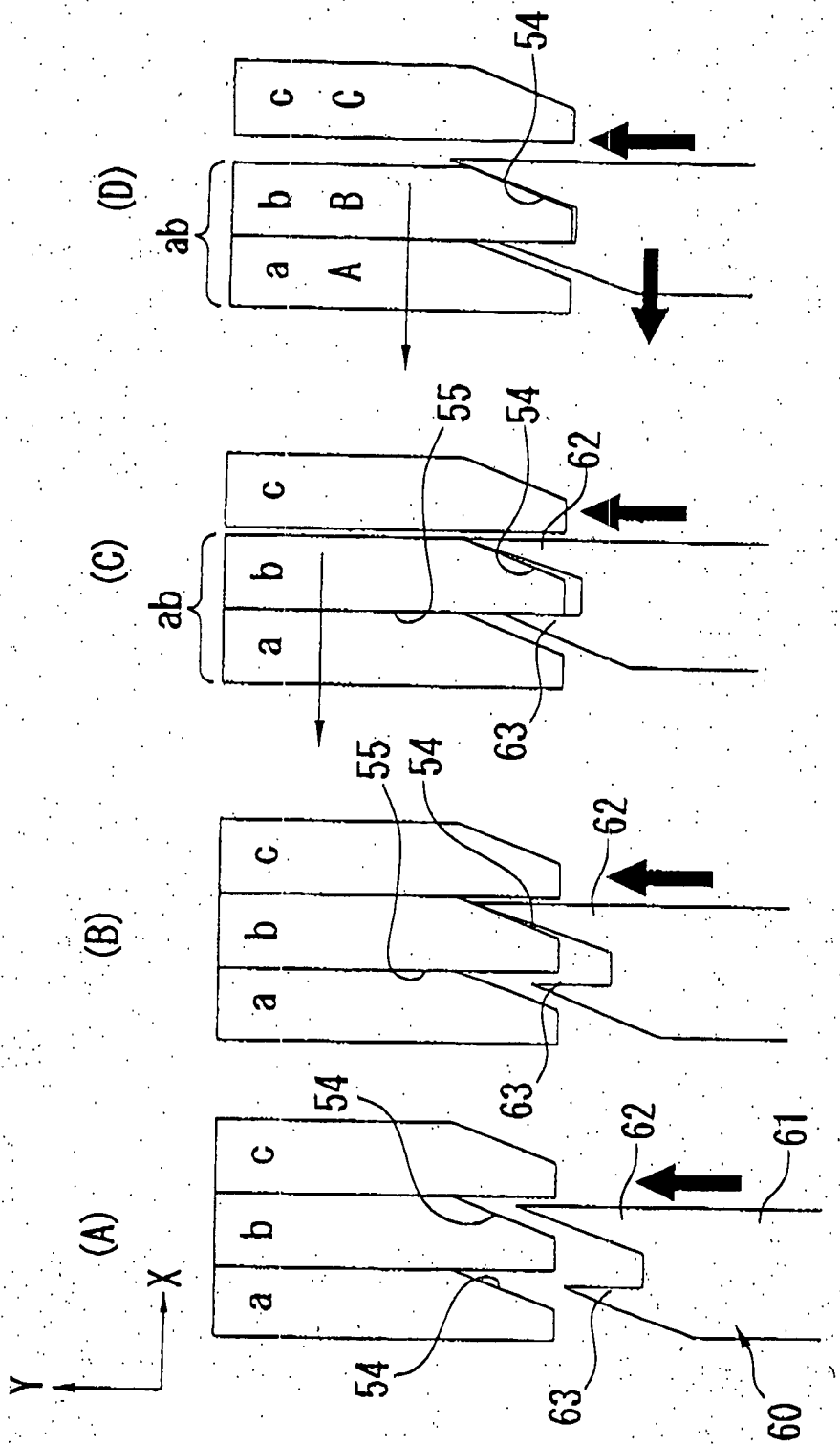

LEFTWARD MOVEMETNT OF SEPARATOR
(A)
(B)
(C)
(D)
a
b
c
ab
A
B
C
X
Y
54
55
62
63
60
61

FIG. 31

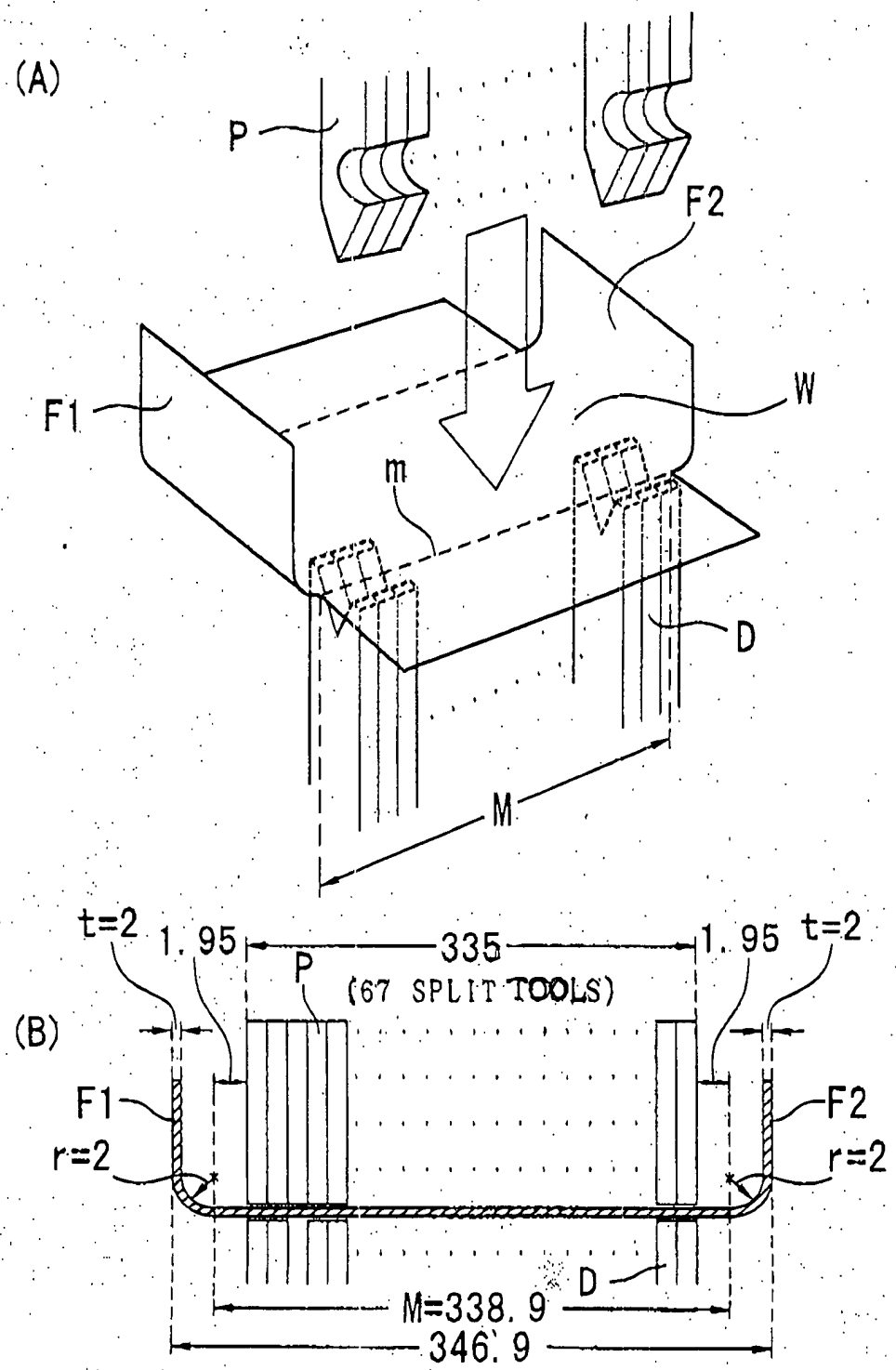

(A)
P
F2
F1
W
m
D
M
(B)
t=2
1.95
335
(67 SPLIT TOOLS)
1.95
t=2
P
F1
F2
r=2
r=2
D
M=338.9
346.9

FIG. 32

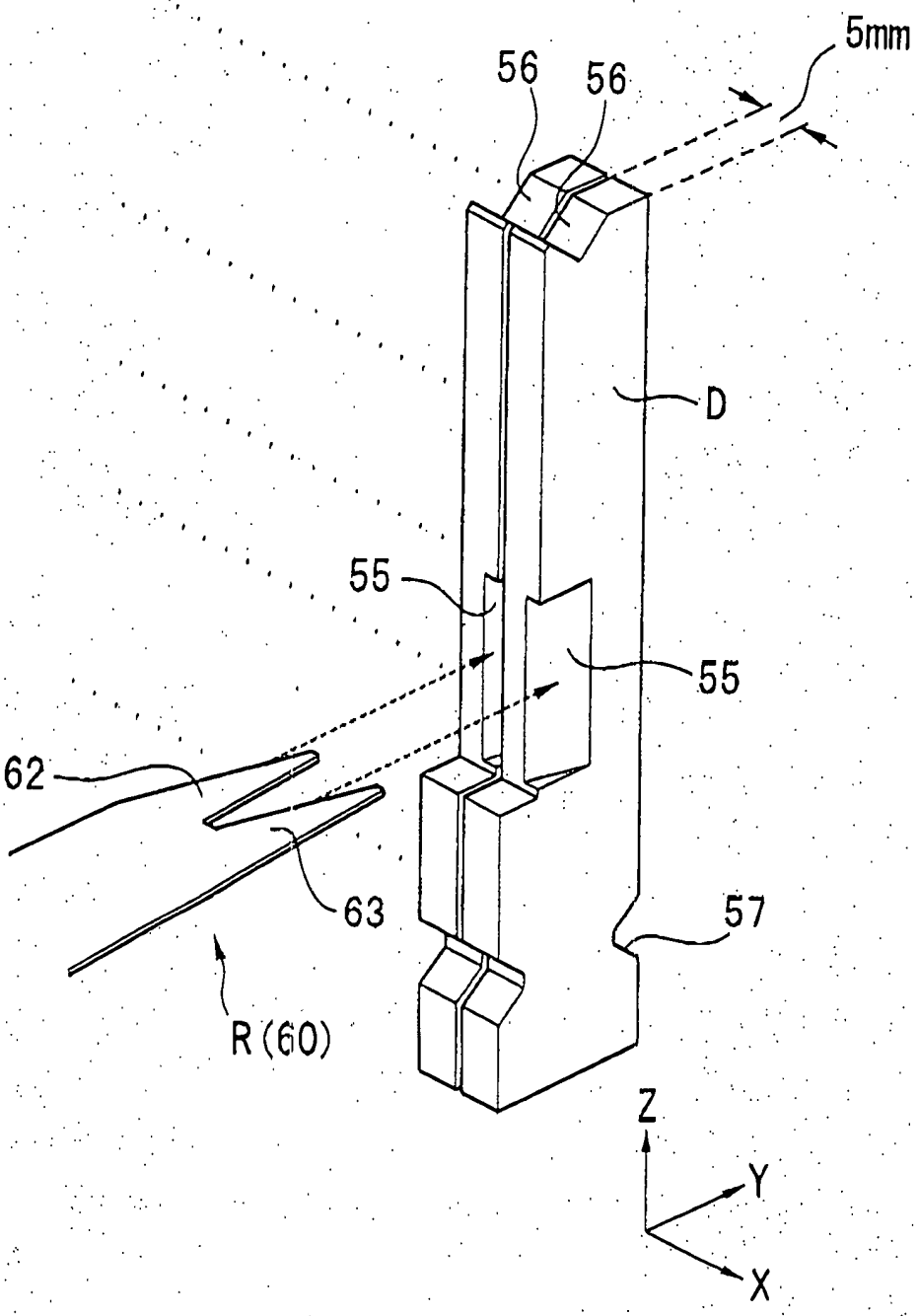


FIG. 33

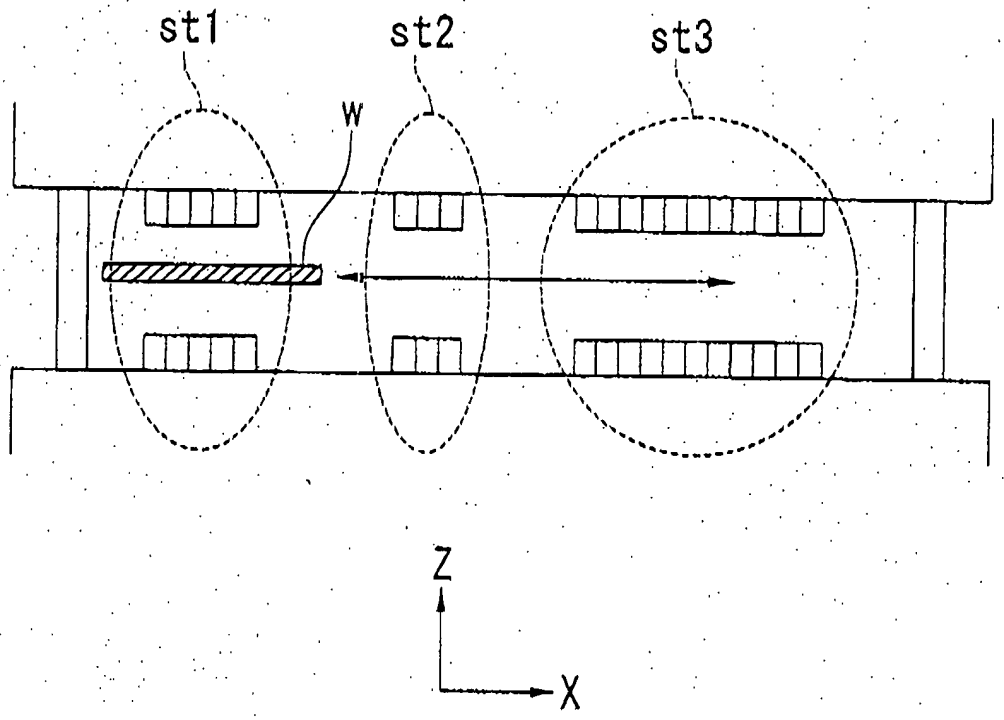
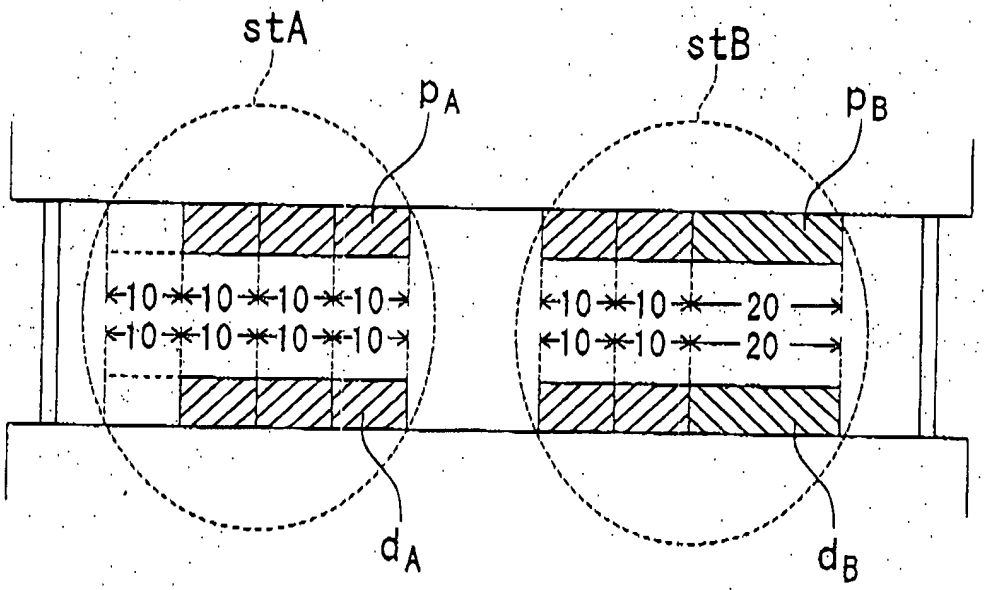


FIG. 34



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